PHASE II ENVIRONMENTAL BASELINE SURVEY OF McCORMICK RANCH, KIRTLAND AIR FORCE BASE, NEW MEXICO

Part 5 of 5

Grace Hagaraty Jeff Johnson Pete Middlebrooks

GRAM, Inc 8500 Menaul Blvd NE Albuquerque, NM 87112

31 January 1996

Final Report

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PHILLIPS LABORATORY
Support Directorate
AIR FORCE MATERIEL COMMAND
KIRTLAND AIR FORCE BASE, NM 87117-5776

#### PL-TR-95-1042

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Project Manager

FOR THE COMMANDER

MICHELLE L. HEDRICK, GS-13

Chief, Safety & Environmental

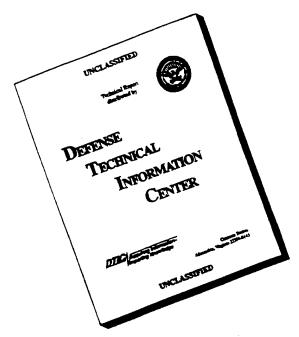
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1. Report Date (dd-mm-yy) 31 January 1996	2. Report Type Final Report		<b>s covered (f</b> t 93 - Ja				
4. Title & subtitle Phase II Environmental Base Ranch, Kirtland AFB, NM, P	•		5a. Contract or Grant # F29601-93-C-0219				
·		5b. Pro	5b. Program Element # 62601F				
6. Author(s) Grace Hagaraty, GRAM, Inc.		5c. Pro	j <b>ect</b> # 9993	3			
Jeff Johnson, GRAM, Inc. Pete Middlebrooks, LATA		5d. Tas	s <b>k</b> # 00				
Pete Wilddieblooks, LATA		5e. Wo	rk Unit # SE	E			
7. Performing Organization N GRAM, Inc. 8500 Menaul Blvd. N.E. Albuquerque, New Mexico 8	٠.		8. Performi	ning Organization Report #			
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13. Supplementary Notes W	ork done in associa	tion with L	os Alamos	s Technical Associates			
present on McCormick Ranch contaminants were identified meter, magnetometer/gradion were selected to conduct fur five areas and 13 specific hig compounds, PETN, TNT, TNT performed and no explosives found in 2 samples, mangan	n. Explosive test areas lusing the following geneter, and ground penether environmental anally explosive test sites. Independent of the gradation products, or degradation products was detected in 3 services.	having the greeophysical sur- trating radar. ysis. A total of The samples we nitrates and r ts were identif	eatest potent vey method From the ge of 310 soil savere screene adioactivity ied. Semi-ves were dis	ds: EM 31 terrain conductivity geophysical surveys five areas samples were collected from the ned for semi-volatile organic			
15. Subject Terms McCormic	ck Ranch, Environmenta	ıl Baseline Suı	vey, Contar	mination			
16. Report 17. Abstract		19. Limitation of Abstract	20. # of Pages	21. Responsible Person (Name and Telephone #)			
Unclassified Unclassifie	d Unclassified	Unlimited	260	Michelle Hedrick 505-846-4574			



Quanterra Incorporated 880 Riverside Parkway West Sacramento, California 95605

916 373-5600 Telephone 916 372-1059 Fax

October 10, 1994

QUANTERRA PROJECT NUMBER: 077682

PO/CONTRACT: 006

Jeff Johnson Gram, Inc. 8500 Menaul Blvd. NE, #B-370 Albuquerque, NM 87112

Dear Mr. Johnson:

This report contains the analytical results for the one aqueous and eleven soil samples which were received under chain of custody by Quanterra West Sacramento on 14 September 1994. These samples are associated with your Kirtland AFB project.

The case narrative is an integral part of this report.

If you have any questions, please call me at (916) 374-4362.

Sincerely,

Diana LV Brooks Project Manager

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**Includes Samples: 12** 

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Includes Samples: 1 - 12

Sample Data Sheets
Method Blank Report
Laboratory Control Sample Report (LCS)



#### **CASE NARRATIVE**

# **QUANTERRA PROJECT NUMBER 077682**

#### **General Comments**

Temperature blanks were not present upon sample receipt at the laboratory. The ambient temperatures were 2.2 degrees C and 4.1 degrees C.

### Semivolatile Organics - Method 8270

The Laboratory Control Sample (LCS) 20SEP94-11A was found to have 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, Hexachloroethane, 2-Nitroaniline, Dimethyl phthalate, and Bis(2-ethylhexyl)phthalate above the control limits.

The Laboratory Control Sample (LCS) 20SEP94-11A was found to have 3-Nitroaniline above the control limits.

These compounds were not detected in the samples, thus no correction action was necessary.

Sample 02960001 (Quanterra ID 077682-009) has 2,4,6-Tribromophenol surrogate recovery above the control limits. The sample was not detected for analytes, thus the no corrective action was necessary.

Due to electronic deliverable limitations, the library search data is available in hardcopy format only.

# Specialty Explosives by HPLC/MS - Method 8321

Sample 03140001 (Quanterra ID 077682-012) was re-extracted outside of the analytical holding time due to the initial extraction and analysis resulted in poor chromatography.

The Duplicate Control Sample (DCS) has Tetryl recoveries above the control limit. The sample was not detected for analytes, thus no corrective action was necessary.

Tetryl was above the continuing calibration control limits which was associated with samples 00970001, 01090001, 02660001, 02960001,01130001, and 01200001 (Quanterra IDs 077682-001 thru -011). The end bracketing sample for Tetryl was within the control limits. The samples were subsequestily re-injected with Tetryl within the control limits.

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# CASE NARRATIVE - cont. QUANTERRA PROJECT NUMBER 077682

# Selected Metals - Various Methods

The ICAP method blank (22SEP94-TX) was found to have 5.8 mg/kg of Iron present.

No other anomalies were associated with this report.



# QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documental quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

#### Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

Single Control Samples. An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.



# SAMPLE DESCRIPTION INFORMATION for Gram, Inc.

				Sa	mple	ed	Red	eive	ed .
Lab ID C	Client ID		Matrix	Date	•	Time		Date	-
077682-0002-SA 0 077682-0003-SA 0 077682-0004-SA 0 077682-0005-SA 0 077682-0006-SA 0 077682-0007-SA 0 077682-0008-SA 0 077682-0009-SA 0 077682-0010-SA 0 077682-0011-SA 0	01780001 01790001 01790002 01800001 01930001 019970001 02660001 02960001 01130001	(0.00,3.00,) (0.00,3.00,) (0.00,3.00,) (0.00,3.00,) (3.00,6.00,) (3.00,6.00,) (2.00,3.00,) (2.50,4.00,) (0.00,3.00,) (0.00,3.00,)	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	07 SEF 07 SEF 07 SEF 08 SEF 09 SEF 09 SEF 09 SEF 12 SEF 12 SEF	94 94 94 94 94 94 94 94	15:00 15:00 15:00 15:00 09:30 09:00 10:30 11:23 11:38 08:45 09:15 11:00	14 14 14 14 14 14 14 14	SEP SEP SEP SEP SEP SEP SEP SEP	94 94 94 94 94 94 94 94

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# CHAIN OF CUSTODY

Lumples rec'd un govot concluters. DATE NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK 46-11-6 DATE BILL OF LADING # detail 6535354437 0 3000 4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY 16 hason SIGNATURE SIGNATURE RECEIVED BY SHIPPER: LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) SIGNATURE RECEIVED BY LABORATORY: 16-62 years 160 4 ع اها و な。な RECEIVED BY: 2. NITRATE + NITRITE (E353.2) (500) 38 My 0913 LABORATÓRY ANALYSES: 94194 Ofou 260 15/1/6 41244 084 9/194 150c 4K/GY 102 ANALYSES REQUESTED 94144 1123 COLLECTED 00S1 K8/4/6 TYPE OF CONTAINERS לא CONTAINER VOLUME DATECTIME COMPANY NAME 9/9/ky 1138 COMPANY NAME COMPANY NAME SEMI-VOCs (SW8270) 5. MERCURY (SW7471) # OF CONTAINERS CYANIDE (SW9012) PRESERVATIVE 19/7/94 4/1/64 युव 7 MATRIX Londo-11/2ther PHILLIPS LABORATORY, KIRTLAND AFB C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT JEFF JOHNSON (GRAM) 505-299-1282 202540 STEVE GORIN (LATA) 505-880-3439 NALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1 - 7) SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): SIGNATURE RELEASED TO SHIPPER BY: CONTAINER TYPES: P - POLYETHYLENE AG - AMBER GLASS McCORMICK RANCH CG - CLEAR GLASS RELINQUISHED BY: 000 q 000 0 0 000 000 0 ITE ID OCATION ID, SAMPLE ID) Q و SAMPLE IDENTIFICATION LABORATORY CONTACT: SECONDARY CONTACT: COMPANY NAME PRIMARY CONTACT: COMPANY NAME COMPANY NAME و  $\sigma$ a PROJECT NAME: RAM INC RTLD154 - 🔾 RTLD154 - 🚫 الإلايا RTLD154-0 & RTLD154-RTLD154-RTLD154 -RTLD134-RTLD154 -RTLD154 -RTLD154 -RTLD154 -4 - WATER OTHER MATRIX: W; soll.

CHAIN OF CUSTODY

Jample reid in G. Condition MODH 4 DATE TIME TIME MYDOS HO NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK DATE DATE BILL OF LADING # MV02. 4" A 250 ٠, 4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY FONT SIGNATURE SIGNATURE 뇧 RECEIVED BY SHIPPER: 6. LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) Thurstyn. SIGNATURE RECEIVED BY LABORATORY: EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) H.S.H RECEIVED BY: NITRATE + NITRITE (E353.2) LABORATORY ANALYSES: ) jæ ANALYSES REQUESTED COLLECTED DATE/TIME COMPANY NAME TYPE OF CONTAINERS CONTAINER VOLUME COMPANY NAME COMPANY NAME 5. MERCURY (SW7471) SEMI-VOCs (SW8270) CYANIDE (SW9012) # OF CONTAINERS PRESERVATIVE 4/11/6 からて MATRIX 3 tal Johnson PHILLIPS LABORATORY, KIRTLAND AFB 4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL •NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT JEFF JOHNSON (GRAM) 505-299-1282 STEVE GORIN (LATA) 505-880-3439 ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-7) SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): SIGNATURE RELEASED TO SHIPPER BY: CONTAINER TYPES P - POLYETHYLENE AG - AMBER GLASS CG - CLEAR GLASS McCORMICK RANCH RELINQUISHED BY: 000 (SITE ID, LOCATION ID, SAMPLE ID) J SAMPLE IDENTIFICATION LABORATORY CONTACT: SECONDARY CONTACT: COMPANY NAME COMPANY NAME PRIMARY CONTACT: COMPANY NAME PROJECT NAME: 0 FRAM TH CLIENT: KRTLD154-KRTLD154. KRTLD154. KRTLD154. KRTLD154 KRTLD154 -KRTLD154 W - WATER KRTLD154 KRTLD154 KRTLD154 KRTLD154 O-OTHER MATRIX: S.SOIL.

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#### Method 8321

Client Name: Gram, Inc.

(0.00,3.00,) 01200001 Client ID:

077682-0011-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 12 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Dry Wt. Reporting Units Limit Result Parameter 0.50 Nitroglycerin PETN mg/kg ND 0.50 mg/kg ND

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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## QC LOT ASSIGNMENT REPORT Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077682-0001-SA 077682-0002-SA 077682-0003-SA 077682-0004-SA 077682-0005-SA 077682-0006-SA 077682-0007-SA 077682-0008-SA 077682-0009-SA 077682-0010-SA	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S	19 SEP 94-7B 19 SEP 94-7B	19 SEP 94-7B 19 SEP 94-7B

# **Ciii uanterra**

# Specialty Explosives by HPLC/MS

#### Method 8321

Client Name: Gram, Inc. Client ID: 01780001 (0.00,3.00,)

077682-0001-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 07 SEP 94 Prepared: 19 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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#### Method 8321

Client Name: Gram, Inc.

Client ID: 01790001 (0.00,3.00,)

Lab ID: 077682-0002-SA

Matrix: SOIL Sampled: 07 SEP 94 Received: 14 SEP 94
Authorized: 14 SEP 94 Prepared: 20 SEP 94 Analyzed: 28 SEP 94

Parameter Result Units Limit Nitroglycerin PETN ND mg/kg 0.50 ND mg/kg 0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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#### Method 8321

Client Name: Gram, Inc. Client ID: 01790002 (0.00, 3.00,)

077682-0003-SA Lab ID:

Received: 14 SEP 94 Sampled: 07 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Analyzed: 28 SEP 94 Authorized: 14 SEP 94

Dry Wt. Units Reporting Limit Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 mg/kg ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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#### **C**iii uanterra Environmental

# Specialty Explosives by HPLC/MS

Method 8321

Client Name: Gram, Inc. Client ID: 01800001 Lab ID: 077682-0004-SA (0.00,3.00,)

Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 07 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter .	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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#### Method 8321

Client Name: Gram, Inc. Client ID: 01930001 (0.00, 3.00,)

077682-0005-SA Lab ID:

Received: 14 SEP 94 Sampled: 08 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Analyzed: 28 SEP 94 Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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## **Q**wuanterra Environmental Services

# Specialty Explosives by HPLC/MS

#### Method 8321

Client Name: Gram, Inc. Client ID: 00970001 (3.00,6.00,)

Lab ID:

077682-0006-SA

SOIL Matrix: Authorized: 14 SEP 94 Sampled: 09 SEP 94 Prepared: 20 SEP 94

Received: 14 SEP 94 Analyzed: 28 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

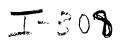
ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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#### Method 8321

Client Name: Gram, Inc. Client ID: 01090001 (3.00,6.00,)

077682-0007-SA Lab ID:

Sampled: 09 SEP 94 Prepared: 20 SEP 94 Received: 14 SEP 94 SOIL Matrix: Analyzed: 28 SEP 94 Authorized: 14 SEP 94

Dry Wt. Units Reporting Limit Result Parameter 0.50 ND mg/kg Nitroglycerin mg/kg 0.50 ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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#### Method 8321

Client Name: Gram, Inc. Client ID: 02660001

(2.00, 3.00,)

077682-0008-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 09 SEP 94 SOIL Matrix: Prepared: 20 SEP 94 Authorized: 14 SEP 94

Reporting Dry Wt. Limit Units Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 mg/kg ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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#### **L**wuanterra Liviconmental

#### Specialty Explosives by HPLC/MS

#### Method 8321

Client Name: Gram, Inc. Client ID: 01130001 (0.00, 3.00,)

077682-0010-SA Lab ID: Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 12 SEP 94 Prepared: 20 SEP 94 Matrix: SOIL 14 SEP 94 Authorized:

Dry Wt. Reporting Units Limit Result Parameter 0.50 mg/kg Nitroglycerin PETN ND 0.50 mg/kg ND

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787



#### Method 8321

Client Name: Gram, Inc.

Client ID: 02960001 (2.50,4.00,)

Lab ID: 077682-0009-SA

Matrix: SOIL Sampled: 09 SEP 94 Received: 14 SEP 94
Authorized: 14 SEP 94 Prepared: 20 SEP 94 Analyzed: 28 SEP 94

Parameter Result Dry Wt. Reporting Units Limit Nitroglycerin PETN ND mg/kg 0.50 mg/kg 0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

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# METHOD BLANK REPORT Special Services - LC Mass Spectrometry

Analyte		Result	Units	Reporting Limit
Test: 8321-IRP-EXP-S Matrix: SOIL QC Lot: 19 SEP 94-7B Nitroglycerin PETN	QC Run:	19 SEP 94-7B ND ND	mg/kg mg/kg	0.50 0.50
Test: 8321-IRP-EXP-S Matrix: SOIL QC Lot: 19 SEP 94-7B Nitroglycerin PETN	QC Run:	19 SEP 94-7B ND ND	mg/kg mg/kg	0.50 0.50



LABORATORY CONTROL SAMPLE REPORT Special Services - LC Mass Spectrometry

Analyte	•	ration Measured	Accur LCS	racy(%) Limits
Category: 8321-IRP-S Explosives by Matrix: SOIL QC Lot: 19 SEP 94-7B QC Run: Concentration Units: mg/kg	HPLC/MS 19 SEP 94-7B			
Nitroglycerin PETN	5.00 2.50	6.07 2.78	121 111	65-135 65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.



#### Method 8321

Client Name: Gram, Inc. Client ID: 03140001 (0.00, 0.00,)Client ID:

077682-0012-SA Lab ID:

Received: 14 SEP 94 Analyzed: 06 OCT 94 Sampled: 13 SEP 94 Prepared: 28 SEP 94 AQUEOUS Matrix: Authorized: 14 SEP 94

Reporting Limit Units Result Parameter ug/L 50 ND Nitroglycerin 50 ND ug/L PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.

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QC LOT ASSIGNMENT REPORT Special Services - LC Mass Spectrometry

Laboratory
Sample Number

QC Matrix
QC Category

QC Lot Number
QC Run Number
(SCS/BLANK)

Q77682-0012-SA

AQUEOUS

8321-IRP-A

27 SEP 94-7B

27 SEP 94-7B



METHOD BLANK REPORT Special Services - LC Mass Spectrometry Project: 077682

8321-IRP-EXP-A Test:

Specialty Explosives by HPLC/MS

Matrix: AQUEOUS QC Lot: 19 SEP 94-7B QC Run: 27 SEP 94-7B

QC Lot: 19 SEP 94-78	QC Run: 27	3EF 34-70		Reporting
Analyte		Result	Units	Limit
Nitroglycerin PETN		ND ND	ug/L ug/L	50 50



LABORATORY CONTROL SAMPLE REPORT Special Services - LC Mass Spectrometry

Project: 077682

Category: 8321-IRP-A Explosives by HPLC/MS
Matrix: AQUEOUS
QC Lot: 19 SEP 94-7B QC Run: 27 SEP 94-7B

Concentration Units: ug/L

Analyte	Concent	ration	Accur	racy(%)
	Spiked	Measured	LCS	Limits
Nitroglycerin	800	603	75	65-135
PETN	400	420	105	65-135

Calculations are performed before rounding to avoid round-off errors in calculated results.



# Nitroaromatics and Nitramines by HPLC

#### Method 8330

Client Name: Gram, Inc. Client ID: 01780001 (0.00, 3.00,)

077682-0001-SA Lab ID:

Received: 14 SEP 94 Analyzed: 21 SEP 94 Sampled: 07 SEP 94 Prepared: 20 SEP 94 Matrix: SOIL Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: YING TAO

Approved By: Karla Buechler

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# Nitroaromatics and Nitramines by HPLC

#### Method 8330

Client Name: Gram, Inc. Client ID: 01790001 (0.00,3.00,)

077682-0002-SA Lab ID:

Received: 14 SEP 94 Analyzed: 21 SEP 94 Sampled: 07 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: YING TAO

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787





Services

# Nitroaromatics and Nitramines by HPLC

#### Method 8330

Client Name: Gram, Inc. Client ID: 01790002 (0.00,3.00,)

077682-0003-SA Lab ID:

Received: 14 SEP 94 Analyzed: 21 SEP 94 Sampled: 07 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: YING TAO

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787



# Nitroaromatics and Nitramines by HPLC

#### Method 8330

Client Name: Gram, Inc.

(0.00,3.00,) 01800001 Client ID:

077682-0004-SA Lab ID:

Received: 14 SEP 94 Analyzed: 21 SEP 94 Sampled: 07 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: YING TAO

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787





Services

# Nitroaromatics and Nitramines by HPLC

### Method 8330

Client Name: Gram, Inc. Client ID: 01930001 (0.00,3.00,)

077682-0005-SA Lab ID:

Received: 14 SEP 94 Analyzed: 21 SEP 94 Sampled: 08 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: YING TAO

Approved By: Karla Buechler

The cover letter is an integral part of this report.

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# Nitroaromatics and Nitramines by HPLC

## Method 8330

Client Name: Gram, Inc.

Client ID: 00970001 (3.00,6.00,)

Lab ID: 077682-0006-SA

Matrix: SOIL Sampled: 09 SEP 94 Received: 14 SEP 94
Authorized: 14 SEP 94 Prepared: 20 SEP 94 Analyzed: 23 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

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Livironmental

Services

## Nitroaromatics and Nitramines by HPLC

#### Method 8330

Client Name: Gram, Inc. Client ID: 01090001 (3.00,6.00,)

077682-0007-SA Lab ID:

Received: 14 SEP 94 Analyzed: 23 SEP 94 Sampled: 09 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



# Nitroaromatics and Nitramines by HPLC

## Method 8330

Client Name: Gram, Inc. Client ID: 02660001 (2.00,3.00,) Client ID:

077682-0008-SA Lab ID:

Sampled: 09 SEP 94 Received: 14 SEP 94 Prepared: 20 SEP 94 Analyzed: 23 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



Services

# Nitroaromatics and Nitramines by HPLC

#### Method 8330

Client Name: Gram, Inc. Client ID: 02960001 (2.50,4.00,)

077682-0009-SA Lab ID:

Received: 14 SEP 94 Sampled: 09 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: Analyzed: 23 SEP 94 14 SEP 94 Authorized:

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



# Nitroaromatics and Nitramines by HPLC

#### Method 8330

Client Name: Gram, Inc. Client ID: 01130001 (0.00,3.00,) Client ID:

Lab ID:

077682-0010-SA

SOIL Matrix: Authorized: 14 SEP 94 Sampled: 12 SEP 94 Prepared: 20 SEP 94

Received: 14 SEP 94 Analyzed: 23 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

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# Nitroaromatics and Nitramines by HPLC

### Method 8330

Client Name: Gram, Inc. Client ID: 01200001 (0.00,3.00,)

077682-0011-SA Lab ID:

Received: 14 SEP 94 Analyzed: 23 SEP 94 Sampled: 12 SEP 94 Prepared: 20 SEP 94 SOIL Matrix: 14 SEP 94 Authorized:

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

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## QC LOT ASSIGNMENT REPORT Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077682-0001-SA 077682-0002-SA 077682-0003-SA 077682-0004-SA 077682-0005-SA 077682-0006-SA 077682-0007-SA 077682-0008-SA 077682-0009-SA 077682-0010-SA	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S	19 SEP 94-7A 19 SEP 94-7A	19 SEP 94-7A 19 SEP 94-7A



## METHOD BLANK REPORT Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8330-IRP-KAFB-1C-S Matrix: SOIL QC Lot: 19 SEP 94-7A QC Run:	19 SEP 94-7A		
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25
Test: 8330-IRP-KAFB-1C-S Matrix: SOIL QC Lot: 19 SEP 94-7A QC Run:	19 SEP 94-7A		
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25



## LABORATORY CONTROL SAMPLE REPORT Special Services - LC Mass Spectrometry

Analyte	Concent Spiked	ration Measured	Accuracy(%) LCS Limits
Category: 8330-IRP-S Explosives by HPLC	P 94-7A		
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Am-DNT 4-Am-DNT 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.854 0.893 0.833 0.813 0.800 0.904 1.08 0.803 0.768 0.767 0.806 0.846 0.921	85 75-107 89 65-135 83 70-99 81 74-99 80 71-95 90 75-107 108 65-135 80 72-106 77 66-102 80 77-101 77 77-108 81 72-97 85 67-110 92 75-104

Calculations are performed before rounding to avoid round-off errors in calculated results.



# Nitroaromatics and Nitramines by HPLC

Method 8330

Client Name: Gram, Inc. Client ID: 03140001 Lab ID: 077682-0012 (0.00,0.00,)

077682-0012-SA

Received: 14 SEP 94 Sampled: 13 SEP 94 Prepared: 19 SEP 94 AQUEOUS Matrix: Analyzed: 20 SEP 94 Authorized: 14 SEP 94

Parameter	Result	Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	13 7.3 14 4.0 6.4 6.9 4.0 5.7 9.4 12 8.5 7.9

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787



QC LOT ASSIGNMENT REPORT Special Services - LC Mass Spectrometry

Laboratory Sample Number

QC Matrix

QC Category

QC Lot Number (DCS)

QC Run Number (SCS/BLANK)

077682-0012-SA

AQUEOUS

8330-COE-A

19 SEP 94-7A

19 SEP 94-7A



METHOD BLANK REPORT Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8330-IRPMS-1C-A Matrix: AQUEOUS QC Lot: 19 SEP 94-7A QC Run: 19	SEP 94-7A		
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	13 7.3 14 4.0 6.4 6.9 4.0 5.7 9.4 12 8.5 7.9



## DUPLICATE CONTROL SAMPLE REPORT Special Services - LC Mass Spectrometry

Analyte	Conce Spiked	ntratio DCS1	n Measured DCS2	AVG		uracy age(%) Limits	Precision (RPD) DCS Limit
Category: 8330-COE-A Matrix: AQUEOUS QC Lot: 19 SEP 94-7A Concentration Units: ug/L  HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Am-DNT 4-Am-DNT 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	50 50 50 50 50 50 50 50 50 50	46.4 51.3 42.9 46.5 44.6 53.4 47.8 48.4 47.9 46.6 48.8	47.4 52.3 44.0 47.6 44.7 54.0 61.3 49.3 46.5 47.1 46.3 48.3 47.6 51.0	46.9 51.8 43.4 47.0 44.6 53.7 60.9 47.6 47.1 47.6 47.1	94 104 87 94 89 107 122 98 94 95 94 100	65-135 65-135 65-135 65-135 65-135 65-135 65-135 65-135 65-135	2.1 35.0 1.9 35.0 2.5 35.0 2.3 35.0 1.1 35.0 1.3 35.0 2.8 35.0 2.8 35.0 2.3 35.0 2.9 35.0 2.9 35.0 4.4 35.0

Calculations are performed before rounding to avoid round-off errors in calculated results.



#### Method 8270

Client Name: Gram, Inc.

(0.00,3.00,) 01790002 Client ID:

077682-0003-SA Lab ID: Received: 14 SEP 94 Sampled: 07 SEP 94 Prepared: 21 SEP 94 Matrix: SOIL Analyzed: 28 SEP 94 Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
• • • • • • • • • • • • • • • • • • • •			
bis(2-Ethylhexyl)-	ND	mg/kg	0.76
phthalate	ND	mg/kg	0.76
Fluoranthene	ND	mg/kg	0.76
Fluorene	ND	mg/kg	0.76
Hexachlorobenzene Hexachlorobutadiene	ND	mg/kg	0.76
Hexachlorocyclopentadiene	ND	mg/kg	0.76
Hexachloroethane	ND	mg/kg	0.76
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.76 0.76
Isophorone	ND	mg/kg	0.76
2-Methylnaphthalene	ND	mg/kg	0.36
2-Methylphenol	ND ON	mg/kg mg/kg	0.36
4-Methylphenol	ND	mg/kg	0.76
Naphthalene	ND	mg/kg	3.6
2-Nitroaniline	ND	mg/kg	3.6
3-Nitroaniline 4-Nitroaniline	ND	mg/kg	3.6
Nitrobenzene	ND	mg/kg	0.76
2-Nitrophenol	ND	mg/kg	0.36
4-Nitrophenol	ND	mg/kg	1.7
N-Nitrosodiphenylamine	ND	mg/kg	0.76
N-Nitroso-di-	110	//-	0.76
n-propylamine	ND	mg/kg	3.6
Pentachlorophenol	ND	mg/kg	0.76
Phenanthrene	ND ND	mg/kg mg/kg	0.36
Pheno1	ND ND	mg/kg	0.76
Pyrene	ND	mg/kg	0.76
1,2,4-Trichlorobenzene	ND	mg/kg	3.6
2,4,5-Trichlorophenol	ND	mg/kg	0.36
2,4,6-Trichlorophenol	110		
Surrogate	Recover	у	
Nitrobonzono-d5	85	%	
Nitrobenzene-d5 2-Fluorobiphenyl	85	%	
Terphenyl-d14	102	%	
Phenol-d5	90	%	
2-Fluorophenol	88	% %	
2,4,6-Tribromophenol	103	10	

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

# Semivolatiles Library Search (20 Compound TID)



## Method 8270

Client Name: Gram, Inc. Client ID: 01790002 (0.00, 3.00,)

Lab ID: 077682-0003-SA

Matrix: SOIL Sampled: 07 SEP 94 Received: 14 SEP 94 Analyzed: 28 SEP 94 Authorized: 14 SEP 94 Prepared: NA

Parameter ·	Result	Units	Reporting Limit
Unknown oxygenated compound Unknown oxygenated compound Unknown oxygenated compound	230 2300	ug/kg ug/kg	
Unknown oxygenated compound Unknown lactone	65000 1300 240	ug/kg ug/kg ug/kg	
Unknown ketone Unknown Unknown oxygenated compound	630 430 440	ug/kg ug/kg	
Propanoic acid, 2-methyl-,l-(1,1- dimethylethyl)-!	220	ug/kg ug/kg	
Unknown Unknown Unknown	170 320 190	ug/kg ug/kg ug/kg	
Unknown Ergost-5-en-3-ol, (3.beta.)- Unknown	220 240	ug/kg ug/kg	
Unknown Unknown	220 360 150	ug/kg ug/kg ug/kg	
TID Compound 18 TID Compound 19 TID Compound 20	ND ND	ug/kg ug/kg	
110 Compound 20	ND	ug/kg	

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers



#### Method 8270

Client Name: Gram, Inc. Client ID: 01930001 (0.00,3.00,)

077682-0005-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 08 SEP 94 Prepared: 21 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
	ND	mg/kg	0.76
Acenaphthene	ND	mg/kg	0.76
Acenaphthylene	ND	mg/kg	0.76
Anthracene	ND	mg/kg	0.76
Benzo(a)anthracene	ND	mg/kg	0.76
Benzo(a)pyrene	ND	mg/kg	0.76
Benzo(b)fluoranthene	ND	mg/kg	0.76
Benzo(g,h,i)perylene	ND	mg/kg	0.76
Benzo(k)fluoranthene	ND	mg/kg	1.7
Benzoic acid	ND	mg/kg	1.4
Benzyl alcohol		-	
4-Bromophenyl	ND	mg/kg	0.76
phenyl ether	ND	mg/kg	0.76
Butyl benzyl phthalate 4-Chloroaniline	ND	mg/kg	1.4
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.76
bis(2-Chloroethoxy)-		44 .	0.76
methane	ND	mg/kg	
bis(2-Chloroethyl) ether	ND	mg/kg	0.76 1.4
4-Chloro-3-methylphenol	ND	mg/kg	0.76
2-Chloronaphthalene	ND	mg/kg	
2-Chlorophenol	ND	mg/kg	0.36
4-Chlorophenyl			0.76
phenyl ether	ND	mg/kg	0.76
Chrysene	ND	mg/kg	0.76
Di-n-butyl phthalate	ND	mg/kg	0.76
Dibenz(a,h)anthracene	ND	mg/kg	0.76
Dibenzofuran	ND	mg/kg	0.76
1.2-Dichlorobenzene	ND	mg/kg	0.76
1,3-Dichlorobenzene	ND	mg/kg	0.76
1,4-Dichlorobenzene	ND	mg/kg	0.76
3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.36
Diethyl phthalate	ND	mg/kg	0.76 0.36
2,4-Dimethylphenol	ND	mg/kg	0.36
Dimethyl phthalate	ND	mg/kg	0.70
4,6-Dinitro-	ND	ma/ka	3.6
2-methylphenol	ND	mg/kg	3.6
2.4-Dinitrophenol	ND	mg/kg mg/kg	0.76
2,4-Dinitrotoluene	ND ND	mg/kg	0.76
2.6-Dinitrotoluene	ND ND	mg/kg	0.76
Di-n-octyl phthalate	MD	mg/ <b>r</b> y	• • • • • • • • • • • • • • • • • • •

(continued on following page)

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

## **(** wanterra Services

### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 01930001

(0.00,3.00,)

077682-0005-SA Lab ID:

Received: 14 SEP 94 Sampled: 08 SEP 94 Matrix: SOIL Analyzed: 28 SEP 94 Prepared: 21 SEP 94 Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline Nitrobenzene 2-Nitrophenol 4-Nitrophenol	ND ND ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	0.76 0.76 0.76 0.76 0.76 0.76 0.76 0.76
N-Nitrosodiphenylamine N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.76 3.6 0.76 0.36 0.76 0.76 3.6 0.36
Surrogate	Recovery		
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	68 76 96 78 74 99	% % % % %	

Percent Moisture is 7%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report. Rev 230787

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## Semivolatiles Library Search (20 Compound TID)

#### <u>Leuanterra</u> Environne ma! Services

#### Method 8270

Client Name: Gram, Inc. Client ID: 01790001 (0.00,3.00,)

077682-0002-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 07 SEP 94 Matrix: SOIL Authorized: 14 SEP 94 Prepared: NA

	D .14	lla dikin	Reporting Limit
Parameter	Result	Units	LIMITE
Unknown oxygenated compound	410	ug/kg	
Unknown oxygenated compound	2200	ug/kg	
Unknown oxygenated compound	61000	ug/kg	
Unknown oxygenated compound	1100	ug/kg	
Unknown lactone	330	ug/kg	
Unknown ketone	490	ug/kg	
Unknown oxygenated compound	270	ug/kg	
Unknown oxygenated compound	290	ug/kg	
Unknown oxygenated compound	160	ug/kg	
Propanoic acid, 2-methyl-,1-(1,1-		•	
dimethylethyl)-!	250	ug/kg	
Unknown	180	ug/kg	
Unknown	270	ug/kg	
Unknown	200	ug/kg	
Unknown	260	ug/kg	
Ergost-5-en-3-ol, (3.beta.)-	220	ug/kg	
Unknown	210	ug/kg	
Unknown	290	ug/kg	
Unknown	160	ug/kg	
TID Compound 19	ND	ug/kg	
TID Compound 20	ND	ug/kg	

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

# **Wuanterra**

### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 01790002 (0.00,3.00,)

Lab ID:

077682-0003-SA

Matrix: SOIL Authorized: 14 SEP 94 Sampled: 07 SEP 94 Prepared: 21 SEP 94

Received: 14 SEP 94 Analyzed: 28 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.76 0.76
Acenaphthylene	ND	mg/kg	0.76
Anthracene	ND ND	mg/kg mg/kg	0.76
Benzo(a)anthracene	ND	mg/kg	0.76
Benzo(a)pyrene Renzo(b)fluoranthone	ND	mg/kg	0.76
Benzo(b)fluoranthene Benzo(g,h,i)perylene	ND	mg/kg	0.76
Benzo(k) fluoranthene	ND	mg/kg	0.76
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.4
4-Bromophenyl		**	0.76
phenyl ether	ND	mg/kg	0.76
Butyl benzyl phthalate	ND	mg/kg	0.76 1.4
4-Chloroaniline	ND	mg/kg	1.4
bis(2-Chloroethoxy)-	ND	mg/kg	0.76
methane	ND	mg/kg	0.76
2,2'-Oxybis(1-chloropropane) bis(2-Chloroethyl) ether	ND	mg/kg	0.76
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.76
2-Chlorophenol	ND	mg/kg	0.36
4-Chlorophenyl			0.70
phenyl ether	ND	mg/kg	0.76
Chrysene	ND	mg/kg	0.76 0.76
Di-n-butyl phthalate	ND	mg/kg	0.76
Dibenz(a,h)anthracene	ND ND	mg/kg mg/kg	0.76
Dibenzofuran	ND	mg/kg	0.76
1,2-Dichlorobenzene	ND	mg/kg	0.76
1,3-Dichlorobenzene 1,4-Dichlorobenzene	ND	mg/kg	0.76
3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.36
Diethyl phthalate	ND	mg/kg	0.76
2,4-Dimethylphenol	ND	mg/kg	0.36
Dimethyl phthalate	ND	mg/kg	0.76
4,6-Dinitro-	ND	ma/ka	3.6
2-methylphenol	ND	mg/kg mg/kg	3.6
2,4-Dinitrophenol	ND	mg/kg	0.76
2,4-Dinitrotoluene	ND	mg/kg	0.76
2,6-Dinitrotoluene Di-n-octyl phthalate	ND	mg/kg	0.76
DI-II-OCLY I Pilcharace	• • •	J. J	

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ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report. Rev 230787

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w uanterra Environmental

#### Method 8270

Client Name: Gram, Inc. Client ID: 01790001 (0.00,3.00,)

Lab ID: 077682-0002-SA

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 07 SEP 94 Prepared: 21 SEP 94 Matrix: SOIL Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.76
Acenaphthylene	ND	mg/kg	0.76
Anthracene	ND	mg/kg	0.76
Benzo(a)anthracene	ND	mg/kg	0.76
Benzo(a)pyrene	ND	mg/kg	0.76
Benzo(b)fluoranthene	ND	mg/kg	0.76
Benzo(g,h,i)perylene	ND	mg/kg	0.76 0.76
Benzo(k)fluoranthene	ND ND	mg/kg	1.7
Benzoic acid	ND ND	mg/kg mg/kg	1.4
Benzyl alcohol	NU	ilig/ kg	2.7
4-Bromophenyl phenyl ether	ND	mg/kg	0.76
Butyl benzyl phthalate	ND	mg/kg	0.76
4-Chloroaniline	ND	mg/kg	1.4
bis(2-Chloroethoxy)-		J. U	
methane	ND	mg/kg	0.76
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.76
bis(2-Chloroethyl) ether	ND	mg/kg	0.76
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.76
2-Chlorophenol	ND	mg/kg	0.36
4-Chlorophenyl	ND	41	0.76
phenyl ether	ND	mg/kg	0.76
Chrysene	ND	mg/kg	0.76
Di-n-butyl phthalate	ND	mg/kg	0.76 0.76
Dibenz(a,h)anthracene	ND ND	mg/kg	0.76
Dibenzofuran	ND ND	mg/kg mg/kg	0.76
1,2-Dichlorobenzene	ND	mg/kg	0.76
1,3-Dichlorobenzene	ND	mg/kg	0.76
1,4-Dichlorobenzene 3,3'-Dichlorobenzidine	ND	mg/kg	1.4
2,4-Dichlorophenol	ND	mg/kg	0.36
Diethyl phthalate	ND	mg/kg	0.76
2,4-Dimethylphenol	ND	mg/kg	0.36
Dimethyl phthalate	ND	mg/kg	0.76
4,6-Dinitro-			
2-methylphenol	ND	mg/kg	3.6
2,4-Dinitrophenol	ND	mg/kg	3.6
2,4-Dinitrotoluene	ND	mg/kg	0.76
2,6-Dinitrotoluene	ND	mg/kg	0.76
Di-n-octyl phthalate	ND	mg/kg	0.76

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ND = Not detected NA = Not applicable

Approved By: Steve Rogers Reported By: Chris Jenkins



#### Method 8270

Client Name: Gram, Inc.

01790001 (0.00, 3.00,)Client ID:

Lab ID:

077682-0002-SA

SOIL Matrix: Authorized: 14 SEP 94

Sampled: 07 SEP 94 Prepared: 21 SEP 94 Received: 14 SEP 94 Analyzed: 28 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitrophenol Nitrophenol N-Nitrosodiphenylamine		mg/kg mg/kkg	0.76 0.76 0.76 0.76 0.76 0.76 0.76 0.36 0.36 0.76 3.6 3.6 0.76
N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.76 3.6 0.76 0.36 0.76 0.76 3.6 0.36
Surrogate	Recovery		
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	83 82 98 88 85 97	% % % %	

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers



#### Method 8270

Client Name: Gram, Inc. Client ID: 00970001 (3.00,6.00,)

077682-0006-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 09 SEP 94 Prepared: 21 SEP 94 Matrix: SOIL Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitrosodiphenylamine		mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.38 0.38
N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.80 3.8 0.80 0.38 0.80 0.80 3.8 0.38
Surrogate	Recovery		
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	82 83 91 87 85 92	% % % % %	

Percent Moisture is 13%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report. Rev 230787

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# Semivolatiles Library Search (20 Compound TID)

#### Method 8270

Client Name: Gram, Inc. Client ID: 00970001 (3.00,6.00,)

077682-0006-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 09 SEP 94 Matrix: SOIL Prepared: NA Authorized: 14 SEP 94

Danamakan	Result	Units	Reporting Limit
Parameter	Nesuic	Onres	
Unknown oxygenated compound	470	ug/kg	
Unknown oxygenated compound	2400	ug/kg	
Unknown oxygenated compound	58000	ug/kg	
Unknown oxygenated compound	1200	ug/kg	
Unknown lactone	180	ug/kg	
Unknown ketone	230	ug/kg	
Propanoic acid, 2-methyl-,1-(1,1-	•••	(1	
dimethylethyl)-!	210	ug/kg	
Unknown	470	ug/kg	
Unknown	980	ug/kg	
Unknown	190	ug/kg	
Unknown	170	ug/kg	
Unknown	140	ug/kg	
TID Compound 13	ND	ug/kg	
TID Compound 14	ND ND	ug/kg	
TID Compound 15	ND ND	ug/kg	
TID Compound 16	ND ND	ug/kg ug/kg	
TID Compound 17	ND ND	ug/kg ug/kg	
TID Compound 18	ND ND	ug/kg	
TID Compound 19	ND ND	ug/kg	
TID Compound 20	NU	ug/ Ng	

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

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#### Method 8270

Client Name: Gram, Inc. Client ID: 01930001 Lab ID: 077682-0005-SA (0.00,3.00,)

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 08 SEP 94 Prepared: NA Matrix: SOIL Authorized: 14 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown oxygenated compound	1500	ug/kg	
Unknown oxygenated compound	50000	ug/kg	
Unknown oxygenated compound	900	ug/kg	
Unknown lactone	230	ug/kg	
Unknown ketone	410	ug/kg	
Unknown oxygenated compound	170	ug/kg	
Unknown oxygenated compound	140	ug/kg	
Propanoic acid, 2-methyl-,l-(1,1-			
dimethylethyl)-!	190	ug/kg	
Unknown	330	ug/kg	
Unknown	150	ug/kg	
Unknown	140	ug/kg	
Unknown	430	ug/kg	
Unknown	330	ug/kg	
Ergost-5-en-3-ol, (3.beta.)-	310	ug/kg	
Unknown	280	ug/kg	
Unknown	470	ug/kg	
Unknown	210	ug/kg	
TID Compound 18	ND	ug/kg	
TID Compound 19	ND	ug/kg	
TID Compound 20	ND	ug/kg	

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

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#### Method 8270

Client Name: Gram, Inc. Client ID: 00970001 (3.00,6.00,)

077682-0006-SA Lab ID:

Received: 14 SEP 94 Sampled: 09 SEP 94 Prepared: 21 SEP 94 1102 Matrix: Analyzed: 28 SEP 94 Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.80
Acenaphthylene	ND	mg/kg	0.80 0.80
Anthracene	ND	mg/kg mg/kg	0.80
Benzo(a)anthracene	ND ND	mg/kg	0.80
Benzo(a)pyrene	ND	mg/kg	0.80
Benzo(b) fluoranthene	ND	mg/kg	0.80
Benzo(g,h,i)perylene	ND	mg/kg	0.80
Benzo(k)fluoranthene Benzoic acid	ND	mg/kg	1.8
Benzyl alcohol	ND	mg/kg	1.5
4-Bromophenyl	***	5, 5	
phenyl ether	ND	mg/kg	0.80
Butyl benzyl phthalate	ND	mg/kg	0.80
4-Chloroaniline	ND	mg/kg	1.5
bis(2-Chloroethoxy)-			
methane	ND	mg/kg	0.80
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.80
bis(2-Chloroethyl) ether	ND	mg/kg	0.80
4-Chloro-3-methylphenol	ND	mg/kg	1.5 0.80
2-Chloronaphthalene	ND	mg/kg	0.80
2-Chlorophenol	ND	mg/kg	0.30
4-Chlorophenyl	ND	mg/kg	0.80
phenyl ether	ND ND	mg/kg	0.80
Chrysene	ND	mg/kg	0.80
Di-n-butyl phthalate	ND	mg/kg	0.80
Dibenz(a,h)anthracene Dibenzofuran	ND	mg/kg	0.80
1,2-Dichlorobenzene	ND	mg/kg	0.80
1,3-Dichlorobenzene	ND	mg/kg	0.80
1,4-Dichlorobenzene	ND	mg/kg	0.80
3,3'-Dichlorobenzidine	ND	mg/kg	1.5
2,4-Dichlorophenol	ND	mg/kg	0.38
Diethyl phthalate	ND	mg/kg	0.80
2.4-Dimethylphenol	ND	mg/kg	0.38
Dimethyl phthalate	ND	mg/kg	0.80
4,6-Dinitro-	ND	ma/ka	3.8
2-methylphenol	ND	mg/kg mg/kg	3.8
2,4-Dinitrophenol	ND	mg/kg	0.80
2,4-Dinitrotoluene	ND	mg/kg	0.80
2,6-Dinitrotoluene	ND	mg/kg	0.80
Di-n-octyl phthalate	מוז	איין /פייי	0.50

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ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

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#### Method 8270

Client Name: Gram, Inc. Client ID: 02660001 (2.00, 3.00,)

077682-0008-SA Lab ID:

Sampled: 09 SEP 94 Prepared: 21 SEP 94 Received: 14 SEP 94 SOIL Matrix: Analyzed: 28 SEP 94 Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene Acenaphthylene	ND ND	mg/kg mg/kg	0.77 0.77
Anthracene	ND	mg/kg	0.77
Benzo(a)anthracene	ND	mg/kg	0.77
Benzo(a)pyrene	ND	mg/kg	0.77
Benzo(b)fluoranthene	ND	mg/kg	0.77
Benzo(g,h,i)perylene	ND	mg/kg	0.77 0.77
Benzo(k)fluoranthene	ND ND	mg/kg mg/kg	1.8
Benzoic acid	ND	mg/kg	1.4
Benzyl alcohol 4-Bromophenyl	No	פיי קפייי	• • • • • • • • • • • • • • • • • • • •
phenyl ether	ND	mg/kg	0.77
Butyl benzyl phthalate	ND	mg/kg	0.77
4-Chloroaniline	ND	mg/kg	1.4
bis(2-Chloroethoxy)-	NO	/lea-	0.77
methane	ND	mg/kg	0.77 0.77
2,2'-Oxybis(1-chloropropane)	ND ND	mg/kg mg/kg	0.77
bis(2-Chloroethyl) ether	ND	mg/kg	1.4
4-Chloro-3-methylphenol	ND	mg/kg	0.77
2-Chloronaphthalene	ND	mg/kg	0.36
2-Chlorophenol 4-Chlorophenyl	ND	פיי קפייי	
phenyl ether	ND	mg/kg	0.77
Chrysene	ND	mg/kg	0.77
Di-n-butyl phthalate	ND	mg/kg	0.77
Dibenz(a,h)anthracene	ND	mg/kg	0.77
Dibenzòfuran	ND	mg/kg	0.77
1,2-Dichlorobenzene	ND	mg/kg	0.77
1,3-Dichlorobenzene	ND	mg/kg	0.77 0.77
1,4-Dichlorobenzene	ND ND	mg/kg mg/kg	1.4
3,3'-Dichlorobenzidine	ND	mg/kg	0.36
2,4-Dichlorophenol Diethyl phthalate	0.80	mg/kg	0.77
2,4-Dimethylphenol	ND	mg/kg	0.36
Dimethyl phthalate	ND	mg/kg	0.77
4,6-Dinitro-			
2-methylphenol	ND	mg/kg	3.6
2,4-Dinitrophenol	ND	mg/kg	3.6 0.77
2,4-Dinitrotoluene	ND ND	mg/kg	0.77
2,6-Dinitrotoluene	ND ND	mg/kg mg/kg	0.77
Di-n-octyl phthalate	מאו	mg/ <b>kg</b>	0.77

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ND = Not detected NA = Not applicable

Approved By: Steve Rogers Reported By: Chris Jenkins

> The cover letter is an integral part of this report. Rev 230787

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#### Method 8270

Client Name: Gram, Inc.

Client ID: 02660001 (2.00,3.00,)

Lab ID: 077682-0008-SA

Matrix: SOIL Sampled: 09 SEP 94 Received: 14 SEP 94 Authorized: 14 SEP 94 Prepared: 21 SEP 94 Analyzed: 28 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol Nitrobenzene 2-Nitrophenol N-Nitrosodiphenylamine		mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	0.77 0.77 0.77 0.77 0.77 0.77 0.77 0.77
N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.77 3.6 0.77 0.36 0.77 0.77 3.6 0.36
Surrogate	Recovery		
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	83 83 97 88 87 103	% % % %	

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers



# Semivolatiles Library Search (20 Compound TID)



#### Method 8270

(2.00,3.00,)

Client Name: Gram, Inc. Client ID: 02660001 Lab ID: 077682-000 077682-0008-SA

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 09 SEP 94 Matrix: SOIL Authorized: 14 SEP 94 Prepared: NA

			Reporting
Parameter	Result	Units	Limit
Unknown oxygenated compound	220000	ug/kg	
Unknown oxygenated compound	2200	ug/kg	
Unknown oxygenated compound	61000	ug/kg	
Unknown oxygenated compound	1100	ug/kg	
Unknown lactone	1300	ug/kg	
Unknown ketone	1000	ug/kg	
Unknown oxygenated compound	700	ug/kg	
Unknown oxygenated compound	190	ug/kg	
Unknown oxygenated compound	<b>8</b> 80	ug/kg	
Unknown	470	ug/kg	
Unknown	510	ug/kg	
Unknown	140	ug/kg	
Unknown	230	ug/kg	
Unknown	180	ug/kg	
TID Compound 15	ND	ug/kg	
TID Compound 16	ND	ug/kg	
TID Compound 17	ND	ug/kg	
	ND	ug/kg	
	ND	ug/kg	
TID Compound 19	ND	ug/kg	
TID Compound 20	שא	ug/ kg	

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report. Rev 230787

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#### Method 8270

Client Name: Gram, Inc. Client ID: 02960001

(2.50,4.00,)

077682-0009-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 Sampled: 09 SEP 94 Prepared: 21 SEP 94 SOIL Matrix: Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene	ND	mg/kg	0.72
Acenaphthylene	ND	mg/kg	0.72
Anthracene	ND	mg/kg	0.72
Benzo(a)anthracene	ND	mg/kg	0.72
Benzo(a)pyrene	ND	mg/kg	0.72
Benzo(b)fluoranthene	ND	mg/kg	0.72 0.72
Benzo(g,h,i)perylene	ND	mg/kg	0.72
Benzo(k)fluoranthene	ND	mg/kg	1.7
Benzoic acid	ND ND	mg/kg mg/kg	1.3
Benzyl alcohol	שא	ilig/ kg	1.5
4-Bromophenyl	ND	mg/kg	0.72
phenyl ether	ND	mg/kg	0.72
Butyl benzyl phthalate	ND	mg/kg	1.3
4-Chloroaniline	ND	"'9/ N9	2.0
bis(2-Chloroethoxy)- methane	ND	mg/kg	0.72
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.72
bis(2-Chloroethyl) ether	ND	mg/kg	0.72
4-Chloro-3-methylphenol	ND	mg/kg	1.3
2-Chloronaphthalene	ND	mg/kg	0.72
2-Chlorophenol	ND	mg/kg	0.34
4-Chlorophenyl		<i>5, 5</i>	
phenyl ether	ND	mg/kg	0.72
Chrysene	ND	mg/kg	0.72
Di-n-butyl phthalate	ND	mg/kg	0.72
Dibenz(a,h)anthracene	ND	mg/kg	0.72
Dibenzofuran	ND	mg/kg	0.72
1,2-Dichlorobenzene	ND	mg/kg	0.72 0.72
1,3-Dichlorobenzene	ND	mg/kg	0.72
1,4-Dichlorobenzene	ND ND	mg/kg mg/kg	1.3
3,3'-Dichlorobenzidine	ND	mg/kg	0.34
2,4-Dichlorophenol	ND	mg/kg	0.72
Diethyl phthalate	ND	mg/kg	0.34
2,4-Dimethylphenol	ND	mg/kg	0.72
Dimethyl phthalate 4,6-Dinitro-	110	5/ **5	
2-methylphenol	ND	mg/kg	3.4
2,4-Dinitrophenol	ND	mg/kg	3.4
2,4-Dinitrotoluene	ND	mg/kg	0.72
2,6-Dinitrotoluene	ND	mg/kg	0.72
Di-n-octyl phthalate	ND	mg/kg	0.72

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ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

## wuanterra Environmental Services

### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 03140001 (0.00, 0.00,)

Lab ID:

077682-0012-SA AQUEOUS Received: 14 SEP 94 Analyzed: 30 SEP 94 Sampled: 13 SEP 94 Prepared: 20 SEP 94 Matrix: Authorized: 14 SEP 94

Parameter	Result	Units	Reporting Limit
Acenaphthene	ND	ug/L	10
Acenaphthylene	ND	ug/L	10
Anthracene	ND	ug/L	10
Benzo(a)anthracene	ND	ug/L	10
Benzo(a)pyrene	ND	ug/L	10 10
Benzo(b)fluoranthene	ND ND	ug/L	10
2,2'-Oxybis(1-chloropropane)	ND ND	ug/L ug/L	10
Benzo(g,h,i)perylene Benzo(k)fluoranthene	ND	ug/L ug/L	10
Benzoic acid	ND	ug/L	50
Benzyl alcohol	ND	ug/L	20
4-Bromophenyl		<b></b> ,	
phenyl ether	ND	ug/L	10
Butyl benzyl phthalate	ND	ug/L	10
bis(2-Chloroethoxy)-		4.	10
methane	ND	ug/L	10
bis(2-Chloroethyl) ether	ND	ug/L	10
4-Chloro-3-methylphenol	ND	ug/L	20 10
2-Chloronaphthalene	ND	ug/L	10
2-Chlorophenol	ND	ug/L	10
4-Chlorophenyl	ND	ua/l	10
phenyl ether	ND ND	ug/L ug/L	20
4-Chloroaniline	ND	ug/L ug/L	10
Chrysene Di-n-butyl phthalate	ND	ug/L	ĺŏ
Dibenz(a,h)anthracene	ND	ug/L	10
Dibenzofuran	ND	ug/L	10
1,2-Dichlorobenzene	ND	ug/L	10 .
1,3-Dichlorobenzene	ND	ug/L	10
1,4-Dichlorobenzene	ND	ug/L	10
3,3'-Dichlorobenzidine	ND	ug/L	20
2,4-Dichlorophenol	ND	ug/L	10
Diethyl phthalate	ND	ug/L	10
2,4-Dimethylphenol	ND	ug/L	10
Dimethyl phthalate	ND	ug/L	10
4,6-Dinitro-	ND	ug/L	50
2-methylphenol	. ND	ug/L ug/L	50 50
2,4-Dinitrophenol 2,4-Dinitrotoluene	ND	ug/L ug/L	10
2,6-Dinitrotoluene	ND	ug/L	10
Di-n-octyl phthalate	ND	ug/L	10
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ND = Not detected NA = Not applicable

Reported By: Chris Jenkins Approved By: Steve Rogers



### ( **Buanterra** Environmental

### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 03140001 (0.00, 0.00,)

Lab ID:

077682-0012-SA

Matrix: AQUEOUS Authorized: 14 SEP 94 Sampled: 13 SEP 94 Prepared: 20 SEP 94

Received: 14 SEP 94 Analyzed: 30 SEP 94

	Dagul+	Units	Reporting Limit	
Parameter	Result	UIIICS	Limit	
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline	ND ND ND ND ND ND ND ND ND ND ND ND ND N	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	10 10 10 10 10 10 10 10 10 10 50 50	
Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitrosodiphenylamine N-Nitroso-di-	ND ND ND ND	ug/L ug/L ug/L ug/L	10 50 10	
n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND 3.4 ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	10 50 10 10 10 10 50	J
Surrogate	Recovery			
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	85 78 33 31 51 60	9/0 9/0 9/0 9/0 9/0 9/0		

(continued on following page)

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

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#### Method 8270

Client Name: Gram, Inc. Client ID: 02960001 (2.50, 4.00,)

077682-0009-SA Lab ID:

Received: 14 SEP 94 Analyzed: 28 SEP 94 SOIL Sampled: 09 SEP 94 Matrix: Prepared: 21 SEP 94 Authorized: 14 SEP 94

Davismakan	Result	Dry Weight Units	Reporting Limit
Parameter	Kesuit	OHIES	Limit
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorocyclopentadiene Hexachlorocyclopentadiene Hexachlorocthane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitrophenol		mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72
N-Nitrosodiphenylamine N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.72 0.72 3.4 0.72 0.34 0.72 0.72 3.4 0.34
Surrogate	Recovery		
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	95 93 113 102 96 123	% % % % %	

(continued on following page)

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report. Rev 230787

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## Semivolatiles Library Search (20 Compound TID)

### Method 8270

Client Name: Gram, Inc. Client ID: 02960001 Lab ID: 077682-0009-SA (2.50,4.00,)

Sampled: 09 SEP 94 Prepared: NA Received: 14 SEP 94 Matrix: SOIL Analyzed: 28 SEP 94 Authorized: 14 SEP 94

Parameter	Result	Units	Reporting Limit
Unknown oxygenated compound	1700	ug/kg	
Unknown oxygenated compound	52000	ug/kg	
Unknown oxygenated compound	890	ug/kg	
Unknown lactone	530	ug/kg	
Unknown ketone	1100	ug/kg	
Unknown oxygenated compound	530	ug/kg	
Unknown oxygenated compound	320	ug/kg	
Unknown	240	ug/kg	
Unknown	770	ug/kg	
Unknown	1100	ug/kg	
Propanoic acid, 2-methyl-,l-(1,1-			
dimethylethyl)-!	250	ug/kg	
Unknown	230	ug/kg	
Unknown	230	ug/kg	
Unknown	530	ug/kg	
Unknown	360	ug/kg	~ -
Unknown	470	ug/kg	
Unknown	830	ug/kg	
Unknown	230	ug/kg	
Unknown	360	ug/kg	<b>∞</b> =
Unknown	230	ug/kg	

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers

The cover letter is an integral part of this report. Rev 230787

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Method 8270

Client Name: Gram, Inc. Client ID: 03140001 (0.00, 0.00,)

077682-0012-SA Lab ID:

Received: 14 SEP 94 Analyzed: 30 SEP 94 Sampled: 13 SEP 94 Prepared: 20 SEP 94 AQUEOUS Matrix: Authorized: 14 SEP 94

Note J : Result is detected below the reporting limit or is an estimated concentration.

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers





## Semivolatiles Library Search (20 Compound ID)

#### Method 8270

Client Name: Gram, Inc. Client ID: 03140001 (0.00,0.00,)

Lab ID: 077682-0012-SA

Received: 14 SEP 94 Matrix: AQUEOUS Authorized: 14 SEP 94 Sampled: 13 SEP 94 Analyzed: 30 SEP 94 Prepared: NA

Parameter	Result	Units	Reporting Limit
TID Compound 1	ND	ug/L	
	ND	ug/L	
TID Compound 2 TID Compound 3	ND	ug/L	
	ND	ug/L	
TID Compound 5 TID Compound 5 TID Compound 6	ND	ug/L	
TID Compound 6	ND	ug/L	
TID Compound 7	ND	ug/L	
TID Compound 8	ND	ug/L	
TID Compound 9	ND	ug/L	
TID Compound 10	ND	ug/L	
TID Compound 11	ND	ug/L	
TID Compound 12	ND	ug/L	
TID Compound 13	ND	ugʻ/L	
TID Compound 14	ND	ug/L	
TID Compound 15	ND	ug/L	
	ND	ug/L	
	ND	ūg/L	
	ND	ug/L	
TID Compound 18	ND	ug/L	
TID Compound 19	ND	ug/L	
TID Compound 20	NU	ug/ L	

ND = Not detected NA = Not applicable

Reported By: Chris Jenkins

Approved By: Steve Rogers



### QC LOT ASSIGNMENT REPORT Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077682-0002-SA 077682-0003-SA 077682-0005-SA 077682-0006-SA 077682-0008-SA 077682-0009-SA 077682-0012-SA	SOIL SOIL SOIL SOIL SOIL AQUEOUS	8270-IRPSL 8270-IRPSL 8270-IRPSL 8270-IRPSL 8270-IRPSL 8270-IRPSL 8270-IRP-A	21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 20 SEP 94-11A	21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 21 SEP 94-11A 20 SEP 94-11A

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# METHOD BLANK REPORT Semivolatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S Matrix: SOIL QC Lot: 21 SEP 94-11A QC Run:	21 SEP 94-11A		
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Benzoic acid	ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.70 0.70 0.70 0.70 0.70 0.70 0.70 1.6
Benzyl alcohol 4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroaniline 2,2'-Oxybis(1-chloropropane) bis(2-Chloroethoxy)-	ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg	1.3 0.70 0.70 1.3 0.70
methane bis(2-Chloroethyl) ether 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol 4-Chlorophenyl	ND	mg/kg	0.70
	ND	mg/kg	0.70
	ND	mg/kg	1.3
	ND	mg/kg	0.70
	ND	mg/kg	0.33
phenyl ether Chrysene Di-n-butyl phthalate Dibenz(a,h)anthracene Dibenzofuran 1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND	mg/kg	0.70
	ND	mg/kg	0.70
1,4-Dichlorobenzene 3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethylphenol Dimethyl phthalate 4,6-Dinitro-	ND	mg/kg	1.3
	ND	mg/kg	0.33
	ND	mg/kg	0.70
	ND	mg/kg	0.33
	ND	mg/kg	0.70
2-methylphenol 2,4-Dinitrophenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene Di-n-octyl phthalate	ND	mg/kg	3.3
	ND	mg/kg	3.3
	ND	mg/kg	0.70
	ND	mg/kg	0.70
	ND	mg/kg	0.70

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### METHOD BLANK REPORT Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S Matrix: SOIL QC Lot: 21 SEP 94-11A QC Run:	21 SEP 94-11A		
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobenzene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline Nitrobenzene 2-Nitrophenol N-Nitrosodiphenylamine N-Nitrosodiphenylamine N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol		mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kkg mg/kkg mg/kg mg/kg mg/kkg mg/kkg mg/kkg mg/kg mg	0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.33 0.33 0.70 3.3 3.3 0.70 0.33 0.70 0.33 0.70 0.33 0.70 0.33
Test: 8270-IRPMS-A Matrix: AQUEOUS QC Lot: 20 SEP 94-11A QC Run:	20 SEP 94-11A		
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene	ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	10 10 10 10 10



# METHOD BLANK REPORT Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-A Matrix: AQUEOUS QC Lot: 20 SEP 94-11A QC Run:	20 SEP 94-11A		
Benzo(b)fluoranthene 2,2'-Oxybis(1-chloropropane) Benzo(g,h,i)perylene Benzo(k)fluoranthene Benzoic acid Benzyl alcohol	ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L	10 10 10 10 50 20
4-Bromophenyl phenyl ether Butyl benzyl phthalate	ND	ug/L	10
	ND	ug/L	10
bis(2-Chloroethoxy)- methane bis(2-Chloroethyl) ether 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol 4-Chloroaniline	ND	ug/L	10
	ND	ug/L	10
	ND	ug/L	20
	ND	ug/L	10
	ND	ug/L	10
	ND	ug/L	20
4-Chlorophenyl phenyl ether Chrysene Di-n-butyl phthalate Dibenz(a,h)anthracene Dibenzofuran 1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND	ug/L	10
	ND	ug/L	10
1,4-Dichlorobenzene 3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethylphenol Dimethyl phthalate	ND	ug/L	10
	ND	ug/L	20
	ND	ug/L	10
4,6-Dinitro- 2-methylphenol 2,4-Dinitrophenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene Di-n-octyl phthalate	ND	ug/L	50
	ND	ug/L	50
	ND	ug/L	10
	ND	ug/L	10
	ND	ug/L	10
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene	ND	ug/L	10
	ND	ug/L	10
	ND	ug/L	10
	ND	ug/L	10



## METHOD BLANK REPORT Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-A Matrix: AQUEOUS QC Lot: 20 SEP 94-11A QC Run: 20	SEP 94-11A		
Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitrosodiphenylamine	ND ND ND ND ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	10 10 10 10 10 10 10 50 50 50 10
N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND ND ND ND ND ND	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	10 50 10 10 10 10 50



LABORATORY CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS

Project: 077682

Category: 8270-IRP-A Semivolatile Organics (Contain all compounds for IRPMS)

**AQUEOUS** Matrix:

20 SEP 94-11A QC Run: 20 SEP 94-11A QC Lot:

Concentration Units: ug/L

Analyte	Concent Spiked	ration Measured	Accui LCS	acy(%) Limits
Phenol bis(2-Chloroethyl) ether 2-Chlorophenol 1,3-Dichlorobenzene 1,4-Dichlorobenzene Benzyl alcohol 1,2-Dichlorobenzene 2-Methylphenol	200 100 200 100 100 100 200	80.2 101 171 89.5 93.7 84.6 94.4 161	40 101 86 90 94 85 94	22-51 35-110 44-112 6-86 11-87 36-101 14-90 40-117
2,2'-0xybis(1- chloropropane) 4-Methylphenol	100 200	101 157	101 78	33-113 36-109
N-Nitroso-di- n-propylamine Hexachloroethane Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol Benzoic acid	100 100 100 100 200 200 200	93.9 96.5 108 82.5 171 161 ND	94 96 108 82 86 80 NC	37-114 0-84 32-114 40-119 40-130 44-122 0-72
bis(2-Chloroethoxy)- methane 2,4-Dichlorophenol 1,2,4-Trichlorobenzene Naphthalene 4-Chloroaniline Hexachlorobutadiene 4-Chloro-3-methylphenol 2-Methylnaphthalene Hexachlorocyclopentadiene 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2-Chloronaphthalene 2-Nitroaniline Dimethyl phthalate Acenaphthylene	100 200 100 100 100 200 100 200 200 100 1	101 158 82.1 86.6 45.5 68.3 177 76.1 50.1 134 121 82.3 120 89.7 91.9	101 79 82 87 46 68 88 76 50 67 60 82 120 90	36-118 40-125 10-98 28-105 40-114 0-94 22-147 22-119 0-93 44-127 46-132 25-120 19-68 0-88 31-117
2,6-Dinitrotoluene 3-Nitroaniline Acenaphthene 2,4-Dinitrophenol 4-Nitrophenol N = Not Calculated, calculation not a	100 100 100 200 200 pplicable	106 102 89.1 133 102	106 102 89 66 51	52-120 34-153 47-145 17-160 16-56

N = Not Detected ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS Project: 077682

(cont.)

Category: 8270-IRPSL Semivolatile Organics (Contain all compounds for IRPMS Low soil)

Matrix:

SOIL 21 SEP 94-11A QC Run: 21 SEP 94-11A

QC Lot: Concentration Units: mg/kg

Analyte   Spiked   Measured   LCS   Limits   Phenol   6.70   4.95   74   41-123   bis(2-Chloroethyl) ether   3.30   2.63   80   43-117   2-Chlorophenol   6.70   5.00   75   44-116   1,3-Dichlorobenzene   3.30   2.62   79   39-106   1,4-Dichlorobenzene   3.30   2.61   79   40-106   1,2-Dichlorobenzene   3.30   2.61   79   40-106   1,2-Dichlorobenzene   3.30   2.69   82   40-107   2-Methylphenol   6.70   5.01   75   44-128   2,2'-Oxybis(1-   Chloropropane)   3.30   2.71   82   38-116   4-Methylphenol   6.70   5.55   83   36-138   N-Nitroso-di-   n-propylamine   3.30   2.92   88   43-123   Hexachloroethane   3.30   2.67   81   39-106   Nitrobenzene   3.30   2.67   81   39-106   Nitrobenzene   3.30   2.83   86   35-180   Sophorone   3.30   2.83   86   35-180   Sophorone   3.30   2.30   70   20-134   2.Aitrophenol   6.70   5.01   75   38-127   Benzoic acid   6.70   5.96   89   33-144   4.Chloroaniline   3.30   2.54   77   36-114   1.2,4-Trichlorophenol   6.70   5.96   89   33-144   4.Chloro-3-methylphenol   6.70   5.96   89   33-143   4.Chloro-3-methylphe	•		. 4	Accum	201(9)
Phenol				100	limits
Princip   Sis				74	
Signature   State					
1,3-Dichlorobenzene	bis(2-Chioroethy)) ether				
1,4-Dichlorobenzene	2-Chlorophenol				
Renzyl alcohol   3.30   2.88   87   37-125     1,2-Dichlorobenzene   3.30   2.69   82   40-107     2-Methylphenol   6.70   5.01   75     2,2'-Oxybis(1-	1,3-Dichloropenzene				
Select   S	1,4-Dichioropenzene				37-125
2-Methylphenol 6.70 5.01 75 44-128 2,2'-Oxybis(1-	Benzyl alconol				
2,2'-Oxybis(1- chloropropane)				75	44-128
chloropropane) 4-Methylphenol 6.70 5.55 83 36-138 N-Nitroso-di- n-propylamine Hexachloroethane 3.30 2.67 81 39-106 Nitrobenzene 3.30 2.83 86 35-180 Isophorone 3.30 2.83 86 35-180 Isophorone 3.30 2.83 70 20-134 2-Nitrophenol 6.70 5.00 75 40-128 2,4-Dimethylphenol 6.70 6.70 8.1 2,4-Dichloroethoxy)- methane 3.30 2.67 81 40-117 2,4-Trichlorobenzene 3.30 2.67 81 40-117 1,2,4-Trichlorobenzene 3.30 2.67 81 41-108 4-Chloro-3-methylphenol 3.30 2.54 77 36-114 Naphthalene 4-Chloro-3-methylphenol 4-Chloro-3-methylphenol 5.70 2.4-Exachlorobutadiene 4-Chloro-3-methylphenol 6.70 2.4-Exachlorocyclopentadiene 3.30 2.63 80 33-143 4-Chloro-3-methylphenol 2.4-Exachlorocyclopentadiene 3.30 2.63 80 33-143 2.63 80 33-143 2.64 74 0-197 2-Methylnaphthalene 3.30 2.44 74 0-197 2-Methylnaphthalene 3.30 2.44 74 0-197 2-Methylnaphthalene 3.30 2.30 70 2.41 2.4,6-Trichlorophenol 6.70 5.21 78 41-132 2.4,5-Trichlorophenol 79 2-Nitroaniline 3.30 3.266 99 45-129 2-Nitroaniline	2 - Methy i phenoi	0.,,			
4-Methylphenol 6.70 5.55 83 36-138 N-Nitroso-di- n-propylamine 3.30 2.92 88 43-123 Hexachloroethane 3.30 2.67 81 39-106 Nitrobenzene 3.30 2.83 86 35-180 Isophorone 3.30 2.30 70 20-134 2-Nitrophenol 6.70 5.00 75 40-128 2,4-Dimethylphenol 6.70 5.01 75 38-127 Benzoic acid 6.70 ND NC 1-137 bis(2-Chloroethoxy)- methane 3.30 2.67 81 40-117 2,4-Dichlorophenol 6.70 4.74 71 34-129 1,2,4-Trichlorobenzene 3.30 2.54 77 36-114 Naphthalene 3.30 2.54 77 36-114 Naphthalene 3.30 2.54 77 36-114 Naphthalene 3.30 2.54 77 36-114 4-Chloro-3-methylphenol 6.70 5.96 89 33-143 2-Methylnaphthalene 3.30 2.30 70 29-111 2,4,6-Trichlorophenol 6.70 5.38 80 36-129 2,4,5-Trichlorophenol 6.70 5.38 80 36-129 2-Chloronaphthalene 3.30 2.61 79 40-119 2-Nitroaniline 3.30 3.26 99 45-129	chloropropane)	3.30	2.71	82	38-116
N-Nitroso-di- n-propylamine  Hexachloroethane Nitrobenzene Sisophorone Sisopho				83	36-138
n-propylamine   3.30   2.92   88   43-125		• • • •			
Hexachloroethane   3.30   2.67   81   39-106	n nyanylamina	3.30	2.92	88	43-123
Nitrobenzene 3.30 2.83 86 35-180  Isophorone 3.30 2.30 70 20-134  2-Nitrophenol 6.70 5.00 75 40-128  2,4-Dimethylphenol 6.70 5.01 75 38-127  Benzoic acid 6.70 ND NC 1-137  bis(2-Chloroethoxy)- methane 3.30 2.67 81 40-117  2,4-Dichlorophenol 6.70 4.74 71 34-129  1,2,4-Trichlorobenzene 3.30 2.54 77 36-114  Naphthalene 3.30 2.54 77 36-114  Naphthalene 3.30 2.54 77 36-114  4-Chloroaniline 3.30 2.54 77 36-114  4-Chloro-3-methylphenol 5.70 5.96 89 33-143  4-Chloro-3-methylphenol 5.70 5.96 89 33-143  2-Methylnaphthalene 3.30 2.44 74 0-197  2-Methylnaphthalene 3.30 2.30 70 29-111  Hexachlorocyclopentadiene 3.30 2.30 70 29-111  2,4,5-Trichlorophenol 6.70 5.38 80 36-129  2-Chloronaphthalene 3.30 2.61 79 40-119  2-Nitroaniline 3.30 2.61 79 40-119  2-Nitroaniline 3.30 3.26 99 45-129	Howach arouthana			81	39-106
Isophorone   3.30   2.30   70   20-134		3.30		86	35-180
2-Nitrophenol 6.70 5.00 75 40-128 2,4-Dimethylphenol 6.70 5.01 75 38-127 Benzoic acid 6.70 ND NC 1-137 bis(2-Chloroethoxy)- methane 3.30 2.67 81 40-117 34-129 2,4-Dichlorophenol 6.70 4.74 71 34-129 1,2,4-Trichlorobenzene 3.30 2.54 77 36-114 1,2,4-Trichlorobenzene 3.30 2.54 77 36-114 1-108 Naphthalene 3.30 1.13 34 0-63 Hexachlorobutadiene 3.30 2.63 80 33-114 4-Chloro-3-methylphenol 6.70 5.96 89 33-143 2-Methylnaphthalene 3.30 2.44 74 0-197 Hexachlorocyclopentadiene 3.30 2.30 70 29-111 2,4,6-Trichlorophenol 6.70 5.21 78 41-132 2,4,5-Trichlorophenol 6.70 5.38 80 36-129 2-Chloronaphthalene 3.30 2.61 79 40-119 2-Nitroaniline 3.30 3.26 99 45-129 2-Nitroaniline				70	20-134
2,4-Dimethylphenol 6.70 5.01 75 38-127 Benzoic acid 6.70 ND NC 1-137 bis(2-Chloroethoxy)- methane 3.30 2.67 81 40-117 2,4-Dichlorophenol 6.70 4.74 71 34-129 1,2,4-Trichlorobenzene 3.30 2.54 77 36-114 Naphthalene 3.30 2.33 71 41-108 4-Chloroaniline 3.30 1.13 34 0-63 4-Chloro-3-methylphenol 6.70 5.96 89 33-143 4-Chloro-3-methylphenol 6.70 5.96 89 33-143 2-Methylnaphthalene 3.30 2.44 74 0-197 Hexachlorocyclopentadiene 3.30 2.30 70 29-111 2,4,6-Trichlorophenol 6.70 5.21 78 41-132 2,4,5-Trichlorophenol 6.70 5.38 80 36-129 2-Chloronaphthalene 3.30 3.26 99 45-129 2-Nitroaniline 3.30 3.26 99 45-129					40-128
Benzoic acid bis(2-Chloroethoxy)- methane 3.30 2.67 81 40-117 2,4-Dichlorophenol 6.70 4.74 71 34-129 1,2,4-Trichlorobenzene 3.30 2.54 77 36-114 Naphthalene 3.30 2.33 71 41-108 4-Chloroaniline 3.30 1.13 34 0-63 Hexachlorobutadiene 3.30 2.63 80 33-114 4-Chloro-3-methylphenol 6.70 5.96 89 33-143 2-Methylnaphthalene 3.30 2.44 74 0-197 Hexachlorocyclopentadiene 3.30 2.30 70 29-111 2,4,6-Trichlorophenol 6.70 5.21 78 41-132 2,4,5-Trichlorophenol 6.70 5.38 80 36-129 2-Chloronaphthalene 3.30 2.61 79 40-119 2-Nitroaniline 3.30 3.26 99 45-129				75	38-127
bis (2-Chloroethoxy)- methane 2,4-Dichlorophenol 3.30 2.67 4.74 71 34-129 1,2,4-Trichlorobenzene 3.30 2.54 77 36-114 Naphthalene 3.30 2.33 71 41-108 4-Chloroaniline 3.30 2.63 80 33-114 4-Chloro-3-methylphenol 2-Methylnaphthalene 3.30 2.44 74 0-197 Hexachlorocyclopentadiene 3.30 2.44 74 0-197 2,4,6-Trichlorophenol 6.70 5.21 78 41-132 2,4,5-Trichlorophenol 6.70 5.38 80 36-129 2-Chloronaphthalene 3.30 2.61 79 40-119 2-Nitroaniline					1-137
methane       3.30       2.67       81       40-117         2,4-Dichlorophenol       6.70       4.74       71       34-129         1,2,4-Trichlorobenzene       3.30       2.54       77       36-114         Naphthalene       3.30       2.33       71       41-108         4-Chloroaniline       3.30       2.63       80       33-114         4-Chloro-3-methylphenol       6.70       5.96       89       33-143         2-Methylnaphthalene       3.30       2.44       74       0-197         Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129	benzoic deid	0.70			
2,4-Dichlorophenol       6.70       4.74       71       34-129         1,2,4-Trichlorobenzene       3.30       2.54       77       36-114         1,2,4-Trichlorobenzene       3.30       2.33       71       41-108         Naphthalene       3.30       2.33       71       41-108         4-Chloroaniline       3.30       2.63       80       33-114         4-Chloro-3-methylphenol       6.70       5.96       89       33-143         2-Methylnaphthalene       3.30       2.44       74       0-197         Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129		3.30	2.67	81	
1,2,4-Trichlorobenzene 3.30 2.54 77 36-114 1,2,4-Trichlorobenzene 3.30 2.33 71 41-108 4-Chloroaniline 3.30 1.13 34 0-63 Hexachlorobutadiene 3.30 2.63 80 33-114 4-Chloro-3-methylphenol 6.70 5.96 89 33-143 2-Methylnaphthalene 3.30 2.44 74 0-197 Hexachlorocyclopentadiene 3.30 2.44 74 0-197 2-Alleren 3.30 2.30 70 29-111 2,4,6-Trichlorophenol 6.70 5.21 78 41-132 2,4,5-Trichlorophenol 6.70 5.38 80 36-129 2-Chloronaphthalene 3.30 2.61 79 40-119 2-Nitroaniline	2 A-Dichlorophenol				
Naphthalene       3.30       2.33       71       41-108         4-Chloroaniline       3.30       1.13       34       0-63         Hexachlorobutadiene       3.30       2.63       80       33-114         4-Chloro-3-methylphenol       6.70       5.96       89       33-143         2-Methylnaphthalene       3.30       2.44       74       0-197         Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129	1 2 4-Trichlorobenzene		2.54		
4-Chloroaniline       3.30       1.13       34       0-03         Hexachlorobutadiene       3.30       2.63       80       33-114         4-Chloro-3-methylphenol       6.70       5.96       89       33-143         2-Methylnaphthalene       3.30       2.44       74       0-197         Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129		3.30			
Hexachlorobutadiene       3.30       2.63       80       33-114         4-Chloro-3-methylphenol       6.70       5.96       89       33-143         2-Methylnaphthalene       3.30       2.44       74       0-197         Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129	4-Chloroaniline				
4-Chloro-3-methylphenol       6.70       5.96       89       33-143         2-Methylnaphthalene       3.30       2.44       74       0-197         Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129	Hexachlorobutadiene				
2-Methylnaphthalene       3.30       2.44       74       0-197         Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129					
Hexachlorocyclopentadiene       3.30       2.30       70       29-111         2,4,6-Trichlorophenol       6.70       5.21       78       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129	2-Methylnaphthalene				
2,4,6-Trichlorophenol       6.70       5.21       76       41-132         2,4,5-Trichlorophenol       6.70       5.38       80       36-129         2-Chloronaphthalene       3.30       2.61       79       40-119         2-Nitroaniline       3.30       3.26       99       45-129	Hexachlorocyclopentadiene				
2,4,5-Trichlorophenol 6.70 5.38 80 30-129 2-Chloronaphthalene 3.30 2.61 79 40-119 2-Nitroaniline 3.30 3.26 99 45-129	2,4,6-Trichlorophenol				
2-Unitronaphthatene 3.30 3.26 99 45-129 2-Nitroaniline 3.30 3.26	2,4,5-Trichlorophenol	6.70			
Z-Nitrodiffine	2-Chloronaphthalene	3.30			
INTERPRETATION OF THE PROPERTY	Dimethyl phthalate	3.30	2.80		
Acenaphthylene 3.30 2.43 74 43-117	Acenaphthylene		2.45		
2,6-Dinitrotoluene 3.30 3.17 90 44-127	2,6-Dinitrotoluene				
3-Nitroaniline 3.30 5.93 180 0-119					
Acenaphthene 5.70 6.60 00 0-130					
2.4-Dinitrophenol 6.70 6.60 99 0-139					
A-Nitronhenol 6.70 8.08 121 41-144	4-Nitronhenol		8.08	121	41-144
N = Not Calculated, calculation not applicable.		ppiicable.			

N = Not Detected ND = Not Detected



(cont.)

LABORATORY CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS Project: 077682

(cont.)

Category: 8270-IRP-A Semivolatile Organics (Contain all compounds for IRPMS)

Matrix: **AQUEOUS** 

QC Lot: 20 SEP 94-11A QC Run: 20 SEP 94-11A Concentration Units: ug/L

	Concentration		Accui	racy(%)
Analyte	Spiked	Measured	LCS	Limits (cont.)
Dibenzofuran 2,4-Dinitrotoluene Diethyl phthalate	100 100 100	87.8 103 96.5	88 103 96	43-116 58-121 0-112
4-Chlorophenyl phenyl ether Fluorene 4-Nitroaniline	100 100 100	75.7 84.8 93.0	76 85 93	45-116 59-121 52-134
4,6-Dinitro- 2-methylphenol N-Nitrosodiphenylamine 4-Bromophenyl	200 100	195 100	98 100	45-149 23-243
phenyl ether Hexachlorobenzene Pentachlorophenol Phenanthrene	100 100 200 100	72.1 67.3 146 92.1	72 67 73 92	46-127 54-126 44-142 57-123
Anthracene Di-n-butyl phthalate Fluoranthene	100 100 100	88.8 111 90.8 95.7	89 111 91 96	59-125 53-127 57-129 60-130
Pyrene Butyl benzyl phthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene	100 100 100 100	129 106 94.2	129 106 94	52-125 42-146 59-126
Chrysèné bis(2-Ethylhexyl)- phthalate Di-n-octyl phthalate	100 100 100	94.9 133 121	95 133 121	59-127 57-129 50-135
Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene	100 100 100 100	66.9 74.8 85.8 82.6 89.1	67 75 86 83 89	55-129 55-134 55-130 64-118 59-121
Dibenz(a,h)anthracene Benzo(g,h,i)perylene	100 100	84.7	85	62-117

#### ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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LABORATORY CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS Project: 077682

(cont.)

(cont.) Category: 8270-IRPSL Semivolatile Organics (Contain all compounds for IRPMS Low soil)

Matrix: SOIL 21 SEP 94-11A QC Run: 21 SEP 94-11A QC Lot:

Concentration Units: mg/kg

	Concentration		Accur	acy(%)
Analyte		Measured	LCS	
Dibenzofuran	3.30	2.61	79	42-116
2,4-Dinitrotoluene	3.30	3.39	103	43-129
Diethyl phthalate	3.30	2.91	88	46-118
Fluorene	3.30	2.59	78	43-117
4-Chlorophenyl		2,00		
phenyl ether	3.30	2.60	79	41-120
4-Nitroaniline	3.30	4.65	141	0-189
4,6-Dinitro-	• • • • • • • • • • • • • • • • • • • •			
2-methylphenol	6.70	6.87	103	0-181
N-Nitrosodiphenylamine	3.30	2.79	85	9-241
4-Bromophenyl	• • • • • • • • • • • • • • • • • • • •			
phenyl ether	3.30	2.69	82	41-126
Hexachlorobenzene	3.30	2.71	82	40-126
Pentachlorophenol	6.70	6.42	96	29-137
Phenanthrene	3.30	2.49	75	54-120
Anthracene	3.30	2.36	72	46-119
Di-n-butyl phthalate	3.30	2.85	86	44-130
Fluoranthene	3.30	2.47	75	44-126
Pyrene	3.30	2.56	78	52-115
	3.30	3.18	96	50-131
Butyl benzyl phthalate	3.30	2.59	78	7-141
3,3'-Dichlorobenzidine	3.30	2.57	78	48-127
Benzo(a)anthracene	3.30	2.48	, , , , , , , , , , , , , , , , , , ,	49-123
Chrysene	3.30	2.40	, 5	15 120
bis(2-Ethylhexyl)-	3.30	2.80	85	48-130
phthalate	3.30	2.58	78	44-137
Di-n-octyl phthalate	3.30	2.85	86	44-136
Benzo(b)fluoranthene	3.30	1.99	60	43-127
Benzo(k)fluoranthene	3.30	2.37	72	46-132
Benzo(a)pyrene	3.30	2.54	<i>י</i> לל	
Indeno(1,2,3-cd)pyrene	3.30	2.42	73	
Dibenz(a,h)anthracene	3.30	2.54	77	40-133
Benzo(g,h,i)perylene	3.30	£ . J7	, ,	70 100

#### ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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## SINGLE CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS

	Concentration Spiked Measured		Accuracy(%) SCS Limits	
Analyte	Spiked	measureu	303	Limits
Category: 8270-IRPSL Matrix: SOIL QC Lot: 21 SEP 94-11A QC Run: Concentration Units: mg/kg	21 SEP 94-11A			
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	0.33 0.33 0.33 0.67 0.67	0.32 0.33 0.39 0.67 0.67	98 100 118 100 100 98	38-116 42-120 40-141 32-131 23-184 20-109
Category: 8270-IRP-A Matrix: AQUEOUS QC Lot: 20 SEP 94-11A QC Run: Concentration Units: ug/L	20 SEP 94-11A			
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	100 100 100 200 200 200	81 88 79 72 127 128	81 88 79 36 64 64	18-105 21-114 45-143 10- 47 19- 85 22-117



(Soil/Solid - Total)

Client Name: Gram, Inc.

(0.00, 3.00,)01790002 Client ID:

077682-0003-SA Lab ID:

Received: 14 SEP 94 Sampled: 07 SEP 94 SOIL Matrix: Analyzed: See Below Prepared: See Below 14 SEP 94 Authorized:

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	9090 ND 2.6 107 ND 7.9 ND 6.5 8580 6.3 2750 126 ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kkg mg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mg/kkg mg/kg	54.1 16.2 0.50 10.8 1.1 0.54 108 5.4 5.4 5.4 1.0 108 2.2 0.10 10.8 16.2 541 0.50 5.4 5.4	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

Note B : Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

(0.00, 3.00,)01800001 Client ID:

077682-0004-SA Lab ID:

Received: 14 SEP 94 Sampled: 07 SEP 94 SOIL Matrix: Analyzed: See Below Prepared: See Below Authorized: 14 SEP 94

Auction Izea.		•				
Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	8740 ND 2.9 98.7 ND ND 39800 6.7 ND ND 7220 4.1 2460 77.5 ND ND ND ND ND ND 1250 0.51 ND ND ND ND ND 15.5 16.6	mg/kk mg/kkkkkkkkkkkkkkkkkkkkkkkkkkkkkkk	53.3 16.0 0.50 10.7 1.1 0.53 107 5.3 5.3 5.3 1.0 107 2.1 0.10 10.7 16.0 533 0.50 5.3	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94 23 SEP 94 28 SEP 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

Note B : Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

(0.00, 3.00,)01780001 Client ID:

Lab ID:

077682-0001-SA

Matrix: Authorized: 14 SEP 94

SOIL

Sampled: 07 SEP 94 Prepared: See Below Received: 14 SEP 94

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	7500 ND 3.3 130 ND ND 69000 6.3 ND ND 6590 4.7 2950 81.9 ND ND ND ND ND ND ND ND 1000 0.70 ND ND ND ND ND ND ND ND ND ND	mg/kgggggggggg/kkggggggggggg/kkkgggggggg	55.1 16.5 0.50 11.0 1.1 0.55 110 5.5 5.5 5.5 1.0 110 2.2 0.10 11.0 16.5 551 0.50 5.5 5.5	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 7841 6010 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

Note B: Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

(0.00, 3.00,)01790001 Client ID:

077682-0002-SA Lab ID:

Received: 14 SEP 94 Sampled: 07 SEP 94 SOIL Analyzed: See Below Matrix: Prepared: See Below Authorized: 14 SEP 94

Parameter         Result         Dry Weight Limit         Reporting Method         Analytical Date         Prepared Date         Analyzed Date           Aluminum         10700         mg/kg         54.6         6010         22 SEP 94 28 SEP 94           Antimony         ND         mg/kg         16.4         6010         22 SEP 94 28 SEP 94           Antimony         ND         mg/kg         0.50 7060         22 SEP 94 28 SEP 94           Arsenic         2.5         mg/kg         10.9         6010         22 SEP 94 28 SEP 94           Barium         113         mg/kg         11.1         6010         22 SEP 94 28 SEP 94           Beryllium         ND         mg/kg         0.55         6010         22 SEP 94 28 SEP 94           Cadmium         ND         mg/kg         0.55         6010         22 SEP 94 28 SEP 94           Calcium         31000         mg/kg         5.5         6010         22 SEP 94 28 SEP 94           Cobalt         ND         mg/kg         5.5         6010         22 SEP 94 28 SEP 94           Copper         6.4         mg/kg         5.5         6010         22 SEP 94 28 SEP 94           Iron         9300         mg/kg         5.5         6010         22 SEP 94	Author Lea.	14 051		•				
Aluminum 10700 mg/kg 54.6 6010 22 SEP 94 28 SEP 94 Antimony ND mg/kg 16.4 6010 22 SEP 94 28 SEP 94 Antimony ND mg/kg 16.4 6010 22 SEP 94 28 SEP 94 Arsenic 2.5 mg/kg 0.50 7060 22 SEP 94 28 SEP 94 Barium 113 mg/kg 10.9 6010 22 SEP 94 28 SEP 94 Beryllium ND mg/kg 0.55 6010 22 SEP 94 28 SEP 94 Cadmium ND mg/kg 10.9 6010 22 SEP 94 28 SEP 94 Calcium 31000 mg/kg 10.9 6010 22 SEP 94 28 SEP 94 Chromium 8.6 mg/kg 5.5 6010 22 SEP 94 28 SEP 94 Chromium ND mg/kg 5.5 6010 22 SEP 94 28 SEP 94 Copper 6.4 mg/kg 5.5 6010 22 SEP 94 28 SEP 94 Copper 9300 mg/kg 5.5 6010 22 SEP 94 28 SEP 94 Copper 9300 mg/kg 5.5 6010 22 SEP 94 28 SEP 94 Lead 6.3 mg/kg 1.0 7421 22 SEP 94 28 SEP 94 Nagnesium 3030 mg/kg 109 6010 22 SEP 94 28 SEP 94 Magnesium 3030 mg/kg 109 6010 22 SEP 94 28 SEP 94 Magnesium 3030 mg/kg 10.0 7421 22 SEP 94 28 SEP 94 Magnesium 3030 mg/kg 10.0 7421 22 SEP 94 28 SEP 94 Magnesium 3030 mg/kg 10.0 7421 22 SEP 94 28 SEP 94 Magnesium 3030 mg/kg 10.0 7421 22 SEP 94 28 SEP 94 Magnesium 3030 mg/kg 10.9 6010 22 SEP 94 28 SEP 94 Molybdenum ND mg/kg 0.10 7471 20 SEP 94 28 SEP 94 Molybdenum ND mg/kg 10.9 6010 22 SEP 94 28 SEP 94 Molybdenum ND mg/kg 10.9 6010 22 SEP 94 28 SEP 94 Nickel ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 5.5 6010 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28 SEP 94 SEP 94 Selenium ND mg/kg 0.50 7740 22 SEP 94 28	Parameter		Result	Dry Weight Units	Reporting Limit	Analytical Method		
	Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium		10700 ND 2.5 113 ND ND 31000 8.6 ND 6.4 9300 6.3 3030 134 ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	54.6 16.4 0.50 10.9 1.1 0.55 10.5 5.5 5.5 5.5 1.0 10.9 16.4 546 0.50 5.5 5.6 10.9	6010 7060 6010 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7841 6010	22 SEP 94 22 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

Note B: Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Approved By: Mei Lai Reported By: Don Carney



(Soil/Solid - Total)

Client Name: Gram, Inc.

(3.00,6.00,)Client ID: 01090001

077682-0007-SA Lab ID:

Received: 14 SEP 94 Sampled: 09 SEP 94 SOIL Analyzed: See Below Matrix: Prepared: See Below Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	12600 ND 2.6 142 ND ND 20200 17.4 ND 6.8 10400 5.5 3450 172 ND ND ND ND ND ND ND ND ND ND	mg/kyggggg/kkyggg/kkkykkkkkkkkkkkkkkkkkk	57.1 17.1 0.50 11.4 1.1 0.57 114 5.7 5.7 5.7 1.0 114 2.3 0.10 11.4 17.1 571 0.50 5.7 5.7	6010 6010 7060 6010 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7471 6010 6010 7740 6010 6010 6010 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94

Percent Moisture is 12%. All results and limits are reported on a dry weight basis.

Note B : Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Approved By: Mei Lai Reported By: Don Carney



(Soil/Solid - Total)

Client Name: Gram, Inc.

02660001 Client ID:

(2.00, 3.00,)

Lab ID:

077682-0008-SA

Sampled: 09 SEP 94

Received: 14 SEP 94

SOIL Analyzed: See Below Matrix: Prepared: See Below Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Parameter  Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	7840 ND 3.2 213 ND ND 133000 9.8 ND ND 6930 3.5 4400 179 ND ND ND ND ND ND ND ND ND ND	mg/kkg mg/kkgg/kkgg/kkkgg/kkkgg/kkkgg/kkkgg/kkgg mgg/kkkgg/kkkgg mgg/kkkgg/kkgg/	54.7 16.4 0.50 10.9 1.1 1.1 219 5.5 5.5 5.5 10.9 1.0 219 2.2 0.10 10.9 16.4 1090 0.50 5.5 1090 0.50	6010 6010 7060 6010 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7471 6010 6010 7740 6010 7841 6010 6010	22 SEP 94 22 SEP 94	29 SEP 94 23 SEP 94 29 SEP 94 20 SEP 94 21 22 SEP 94 22 SEP 94 23 SEP 94 24 29 SEP 94 25 SEP 94 26 SEP 94 27 SEP 94 28 SEP 94 29 SEP 94 29 SEP 94 20 SEP 94 20 SEP 94 20 SEP 94 21 22 SEP 94 22 SEP 94 23 SEP 94 24 25 SEP 94 25 SEP 94 26 SEP 94 27 SEP 94 28 SEP 94 29 SEP 94 20 SEP 94 20 SEP 94 20 SEP 94 21 22 SEP 94 22 SEP 94 23 SEP 94 24 25 SEP 94 25 SEP 94 26 SEP 94 27 SEP 94 28 SEP 94 29 SEP 94 20 SEP 94

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

Note Q: Reporting Limit raised due to high level of another analyte in the sample.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note B : Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

(0.00, 3.00,)01930001 Client ID:

077682-0005-SA Lab ID:

Received: 14 SEP 94 Sampled: 08 SEP 94 SOIL Matrix: Analyzed: See Below Prepared: See Below 14 SEP 94 Authorized:

Parameter Result	· Dry Weight	Reporting	Analytical	Prepared	Analyzed
	Units	Limit	Method	Date	Date
Aluminum 10600 Antimony ND Arsenic 2.8 Barium 102 Beryllium ND Cadmium ND Calcium 30400 Chromium 8.7 Cobalt ND Copper 6.3 Iron 8690 Lead 4.8 Magnesium 2810 Manganese 108 Mercury ND Molybdenum ND Nickel ND Potassium 1640 Selenium ND Silver ND Sodium ND Thallium ND Vanadium 17.8 Zinc 22.8	mg/kg	54.0 16.2 0.50 10.8 1.1 0.54 108 5.4 5.4 5.4 1.0 108 2.2 0.10 10.8 16.2 540 0.50 5.4 540 0.50 10.8 2.2	6010 6010 7060 6010 6010 6010 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 7%. All results and limits are reported on a dry weight basis.

Note B : Compound is also detected in the blank.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Approved By: Mei Lai Reported By: Don Carney



(Soil/Solid - Total)

Client Name: Gram, Inc. Client ID: 00970001

(3.00, 6.00,)077682-0006-SA

Lab ID:

SOIL Matrix: Authorized: 14 SEP 94

Sampled: 09 SEP 94 Prepared: See Below Received: 14 SEP 94 Analyzed: See Below

Authorized. 1. Jan		•				
Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	11500 ND 2.9 135 ND ND 25700 10.7 ND 6.7 10400 5.8 3510 162 ND ND ND ND ND ND ND ND ND ND ND ND 2020 ND ND ND 21.3 23.7	mg/kkg mg/kkkgg mgg/kkkgg/kkkkkkkkkkkkkk	57.4 17.2 0.50 11.5 1.1 0.57 115 5.7 5.7 5.7 1.0 115 2.3 0.10 11.5 17.2 574 0.50 5.7 5.7	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94

Percent Moisture is 13%. All results and limits are reported on a dry weight basis.

Note B : Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc. Client ID: 02960001 (2.50, 4.00,)Client ID:

077682-0009-SA Lab ID:

Received: 14 SEP 94 Analyzed: See Below Sampled: 09 SEP 94 SOIL Matrix: Prepared: See Below Authorized: 14 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	8650 ND 2.3 95.4 ND 22800 7.8 ND ND 8150 109 ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/kggmg/kkggmgg/kkggmgg/kkggmgg/kkggmgg/kkkgggg/kkgggg/kkggg/kkgggg/kkgggg/kkggg/kkgggg/kkgggg/kggg/k	51.7 15.5 0.50 10.3 1.0 0.52 103 5.2 5.2 5.2 1.0 103 2.1 0.10 10.3 15.5 517 0.50 5.2	6010 6010 7060 6010 6010 6010 6010 6010	22 SEP 94	23 SEP 94 28 SEP 94 28 SEP 94 23 SEP 94

Percent Moisture is 3%. All results and limits are reported on a dry weight basis.

Note B: Compound is also detected in the blank.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai

The cover letter is an integral part of this report. Rev 230787

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(Soil/Solid - Total)

Client Name: Gram, Inc.

01130001 Client ID:

(0.00,3.00,)

Lab ID:

077682-0010-SA

Matrix: SOIL Authorized: 14 SEP 94

Sampled: 12 SEP 94 Prepared: See Below Received: 14 SEP 94

Analyzed: See Below

AUCHOLIZED. 1	7 361 37	•				
Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Parameter  Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	9160 ND 2.1 176 ND ND 26400 9.0 ND ND ND ND ND ND ND ND ND ND	on mg/kk mg/kkgg/kkkkkkkkkkkkkkkkkkkkkkkkkk	54.3 16.3 0.50 10.9 1.1 0.54 109 5.4 5.4 5.4 5.4 1.0 109 16.3 543 0.50 10.9 16.3 543	6010 6010 7060 6010 6010 6010 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

Note B : Compound is also detected in the blank.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai

The cover letter is an integral part of this report. Rev 230787

T- 378



(Soil/Solid - Total)

Client Name: Gram, Inc. Client ID: 01200001 (0.00, 3.00,)

077682-0011-SA

Lab ID: SOIL Matrix:

Sampled: 12 SEP 94 Prepared: See Below

Received: 14 SEP 94 Analyzed: See Below

Authorized:	14 SEP 94	Prepared	: See Belo	w Analyze	d: See Belo	W
Parameter	Result	Dry Weight I Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	13400 ND 3.1 237 ND ND 37500 12.1 ND 8.0 12000 6.4 4710 198 ND ND ND ND ND ND ND ND ND ND	mg/kg	56.6 17.0 0.50 11.3 1.1 0.57 113 5.7 5.7 5.7 1.0 113 2.3 0.10 11.3 17.0 566 0.50 5.7 566 0.50	6010 6010 7060 6010 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	22 SEP 94 22 SEP 94	28 SEP 94

Percent Moisture is 12%. All results and limits are reported on a dry weight basis.

Note B : Compound is also detected in the blank.

Note 1 : Reporting limit raised as a dilution was performed because

the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Water - Total)

Client Name: Gram, Inc. Client ID: 03140001

(0.00,0.00,)

Lab ID:

077682-0012-SA

AQUEOUS

Sampled: 13 SEP 94

Received: 14 SEP 94

Matrix: Authorized: 14 SEP 94 Prepared: See Below

Analyzed: See Below

Danamater	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Parameter  Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	O.82 ND O.096 ND O.096 ND 18.5 ND ND O.40 ND 2.8 O.023 ND	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.50 0.40 0.0050 0.020 0.0030 0.040 0.50 0.070 0.060 0.10 0.0050 0.50 0.020 0.080 0.15 5.0 0.0050 0.070 5.0	6010 6010 7060 6010 6010 6010 6010 6010	20 SEP 94	21 SEP 94 21 SEP 94

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



### QC LOT ASSIGNMENT REPORT Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
Laboratory Sample Number  077682-0001-SA 077682-0001-SA 077682-0001-SA 077682-0001-SA 077682-0001-SA 077682-0002-SA 077682-0002-SA 077682-0002-SA 077682-0002-SA 077682-0002-SA 077682-0003-SA 077682-0003-SA 077682-0003-SA 077682-0003-SA 077682-0003-SA 077682-0003-SA 077682-0004-SA 077682-0004-SA 077682-0004-SA 077682-0004-SA 077682-0004-SA 077682-0004-SA 077682-0004-SA 077682-0005-SA 077682-0006-SA	QC Matrix  SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOI	QC Category  7471-IRP-S 7421-IRP-S 7060-IRP-S 7740-IRP-S 7841-IRP-S 7471-IRP-S 7421-IRP-S 7421-IRP-S 7421-IRP-S 7421-IRP-S 7441-IRP-S		
077682-0008-SA 077682-0008-SA 077682-0008-SA	SOIL SOIL SOIL	7060-IRP-S 7740-IRP-S ICP-IRP-S	22 SEP 94-TX 22 SEP 94-TX 22 SEP 94-TX	22 SEP 94-TX 22 SEP 94-TX 22 SEP 94-TX



### QC LOT ASSIGNMENT REPORT Metals Analysis and Preparation (cont.)

Laboratory	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
Laboratory Sample Number  077682-0008-SA 077682-0009-SA 077682-0009-SA 077682-0009-SA 077682-0009-SA 077682-0009-SA 077682-0010-SA 077682-0010-SA 077682-0010-SA 077682-0010-SA 077682-0011-SA 077682-0012-SA 077682-0012-SA	QC Matrix  SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOI	7841-IRP-S 7471-IRP-S 7421-IRP-S 7060-IRP-S 1CP-IRP-S 7841-IRP-S 7471-IRP-S 7421-IRP-S 7060-IRP-S 7740-IRP-S 1CP-IRP-S 7741-IRP-S 7741-IRP-S 7741-IRP-S 7741-IRP-S 7741-IRP-S 7741-IRP-S 7741-IRP-S 7740-IRP-S 7740-IRP-S 1CP-IRP-S 7740-IRP-S 1CP-IRP-S 7741-IRP-S		(SCS/BLANK)  22 SEP 94-TX 20 SEP 94-TX 22 SEP 94-CX 20 SEP 94-CX
077682-0012-SA 077682-0012-SA	AQUEOUS AQUEOUS	7740-IRPAT 7841-IRPAT	20 SEP 94-CX	20 SEP 94-CX



Analyte		Result	Units	Reporting Limit
Test: HG-CVAA-IRP-S Matrix: SOIL QC Lot: 20 SEP 94-AX Mercury	QC Run:	20 SEP 94-AX ND	mg/kg	0.10
Test: PB-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX Lead	QC Run:	22 SEP 94-TX ND	mg/kg	0.50
Test: AS-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX Arsenic	QC Run:	22 SEP 94-TX ND	mg/kg	0.50
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX Selenium	QC Run:	22 SEP 94-TX ND	mg/kg	0.50
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 22 SEP 94-TX Aluminum Antimony Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum	QC Run:	22 SEP 94-TX  ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	50.0 15.0 10.0 1.0 0.50 100 5.0 5.0 5.0 100 2.0



Analyte		Result	Units	Reporting Limit
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 22 SEP 94-TX Nickel Potassium Silver Sodium Vanadium Zinc	QC Run:	22 SEP 94-TX  ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg	15.0 500 5.0 500 10.0 2.0
Test: TL-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX Thallium	QC Run:	22 SEP 94-TX ND	mg/kg	0.50
Test: HG-CVAA-IRP-S Matrix: SOIL QC Lot: 20 SEP 94-AX Mercury	QC Run:	20 SEP 94-AX ND	mg/kg	0.10
Test: PB-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX Lead	QC Run:	22 SEP 94-TX ND	mg/kg	0,.50
Test: AS-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX Arsenic	QC Run:	22 SEP 94-TX ND	mg/kg	0.50



Analyte		Result	Units	Reporting Limit
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX Selenium	QC Run:	22 SEP 94-TX ND	mg/kg	0.50
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 22 SEP 94-TX	QC Run:	22 SEP 94-TX		
Aluminum Antimony Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum Nickel Potassium Silver Sodium Vanadium Zinc		ND ND ND ND ND ND ND ND ND ND ND ND ND N	mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kk mg/kkk mg/kk mg/kkg mg/kkg mg/kkg	50.0 15.0 10.0 1.0 0.50 100 5.0 5.0 5.0 10.0 15.0 500 500 10.0 2.0
Test: TL-FAA-IRP-S Matrix: SOIL QC Lot: 22 SEP 94-TX	QC Run:	22 SEP 94-TX		
Thallium		ND	mg/kg	0.50



Analyte		Res	ult	Units	Reporting Limit
Test: ICP-IRPMS-AT Matrix: AQUEOUS QC Lot: 20 SEP 94-CX	QC Run:	20 SEP 94-CX			
Aluminum Antimony Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum Nickel Potassium Silver Sodium Vanadium Zinc			ND ND ND ND ND ND ND ND ND ND ND ND ND N	mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	0.50 0.40 0.020 0.0030 0.040 0.50 0.070 0.060 0.10 0.50 0.020 0.080 0.15 5.0 0.070 0.080 0.020
Test: HG-CVAA-COE-AT Matrix: AQUEOUS QC Lot: 16 SEP 94-CX	QC Run:	16 SEP 94-CX	ND	mg/L	0.00020
Mercury			110	mg/ L	
Test: AS-FAA-GAFB-IRP		00 CED 04 CV			
QC Lot: 20 SEP 94-CX	QC Run:	20 SEP 94-CX	415	/1	0.0050
Arsenic			ND	mg/L	0.0050



Reporting Limit Units Result Analyte

Test: PB-FAA-GAFB-IRPMS-AT

Matrix: AQUEOUS QC Lot: 20 SEP 94-CX QC Run: 20 SEP 94-CX

0.0050 mg/L ND Lead

Test: SE-FAA-GAFB-IRPMS-AT

Matrix: AQUEOUS

QC Lot: 20 SEP 94-CX QC Run: 20 SEP 94-CX

0.0050 mg/L ND Selenium

Test: TL-FAA-GAFB-IRPMS-AT

Matrix: AQUEOUS

QC Lot: 20 SEP 94-CX QC Run: 20 SEP 94-CX

0.0022 mg/L ND Thallium



# LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

	Concent	ration		acy(%)
Analyte	Spiked	Measured	LCS	Limits
Category: ICP-AT ICP Metals Matrix: AQUEOUS QC Lot: 20 SEP 94-CX QC Run: 20 Concentration Units: mg/L	SEP 94-CX			
Aluminum Antimony Arsenic Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper Iron Lead Lithium Magnesium Manganese Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Tin Titanium Vanadium Zinc	2.00 0.500 2.00 0.0500 1.00 0.0500 0.250 1.00 0.500 0.500 0.200 0.500 0.200 0.500 0.200 0.500 0.200 0.5000 0.500 0.5000 0.5000 0.5000 0.5000 0.5000 0.5000 0.50	2.17 0.560 0.511 2.23 0.0561 1.09 0.0492 104 0.213 0.524 0.267 1.10 0.492 0.217 52.1 0.527 0.214 0.522 51.6 2.17 0.0520 104 2.24 4.20 2.16 0.528 0.519	109 112 102 112 109 98 104 106 107 110 98 104 105 107 104 103 108 104 112 105 106 104	80-120 80-120
Analyte	Concent Spiked	ration Measured	Accus LCS	racy(%) Limits
Category: 7470-IRPAT Mercury by CVAA STATIC QC LIMITS	5 - DO NOT U	JPDATE		
Matrix: AQUEOUS QC Lot: 16 SEP 94-CX QC Run: 16 Concentration Units: mg/L				
Mercury	0.00100	0.000947	95	80-120

#### ND = Not Detected



### LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

(cont.)

Analyte	Concentr Spiked	ration Measured	Accur LCS	acy(%) Limits
Category: AS-OBG-AT Arsenic, Furnace Matrix: AQUEOUS QC Lot: 20 SEP 94-CX QC Run: 20 Concentration Units: mg/L	AA SEP 94-CX			
Arsenic	0.0400	0.0435	109	80-120
Analyte	Concent: Spiked	ration Measured	Accur LCS	racy(%) Limits
Category: 7421-IRPAT Lead, Furnance A/Matrix: AQUEOUS QC Lot: 20 SEP 94-CX QC Run: 20 Concentration Units: mg/L	A (Total) SEP <b>94</b> -CX			
Lead	0.0200	0.0198	99	83-113
Analyte	Concent Spiked	ration Measured	Accui LCS	racy(%) Limits
Category: 7740-IRPAT Selenium, Furnace	Spiked	ration Measured		
Category: 7740-IRPAT Selenium, Furnace	Spiked	ration Measured		
Category: 7740-IRPAT Selenium, Furnace Matrix: AQUEOUS OC Lot: 20 SEP 94-CX QC Run: 20	Spiked e AA	ration Measured 0.0193		
Category: 7740-IRPAT Selenium, Furnace Matrix: AQUEOUS QC Lot: 20 SEP 94-CX QC Run: 20 Concentration Units: mg/L	Spiked  AA  SEP 94-CX  0.0200  Concent	Measured  0.0193	LCS 96 Accur	Limits
Category: 7740-IRPAT Selenium, Furnace Matrix: AQUEOUS QC Lot: 20 SEP 94-CX QC Run: 20 Concentration Units: mg/L Selenium  Analyte Category: 7841-IRPAT Thallium, Furnace Matrix: AQUEOUS	Spiked e AA SEP 94-CX 0.0200 Concent Spiked	Measured  0.0193  ration	LCS 96 Accur	Limits 80-120 racy(%)

### ND = Not Detected



# LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

(cont.)

Analyte	Concent Spiked	ration Measured	Accur LCS	acy(%) Limits
Category: 7471-IRP-S Mercury by CVAA STATIC QC LIMITS -	DO NOT U	PDATE		
Matrix: SOIL QC Lot: 20 SEP 94-AX QC Run: 20 S Concentration Units: mg/kg				_
Mercury	32.0	32.7	102	75-125
Analyte	Concent Spiked	ration Measured	Accur LCS	acy(%) Limits
Category: 7421-IRP-S Lead, Furnace AA STATIC QC LIMTS -	DO NOT UP	DATE		
Matrix: SOIL QC Lot: 22 SEP 94-TX QC Run: 22 S Concentration Units: mg/kg				
Lead	50.9	60.8	119	65-135
Analyte	Concent Spiked	ration Measured	Accur LCS	acy(%) Limits
Catagory, 7060-IDD-S Arsenic, Furnace A	Spiked .A	Measured	Accur LCS	racy(%) Limits
•	Spiked .A DO NOT UP	Measured	Accur LCS	Limits
Category: 7060-IRP-S Arsenic, Furnace A STATIC QC LIMTS - Matrix: SOIL OC Lot: 22 SEP 94-TX QC Run: 22 S	Spiked .A DO NOT UP	Measured	Accur LCS	racy(%) Limits
Category: 7060-IRP-S Arsenic, Furnace A STATIC QC LIMTS - Matrix: SOIL QC Lot: 22 SEP 94-TX QC Run: 22 S Concentration Units: mg/kg	Spiked  A DO NOT UP  EP 94-TX  72.1  Concent	Measured DATE 88.5	LCS 123	Limits
Category: 7060-IRP-S Arsenic, Furnace A STATIC QC LIMTS -  Matrix: SOIL QC Lot: 22 SEP 94-TX QC Run: 22 SC Concentration Units: mg/kg  Arsenic  Analyte	Spiked  A DO NOT UP  EP 94-TX  72.1  Concent Spiked	Measured DATE  88.5 Tration Measured	LCS 123 Accur	75-125
Category: 7060-IRP-S Arsenic, Furnace A STATIC QC LIMTS - Matrix: SOIL QC Lot: 22 SEP 94-TX QC Run: 22 S Concentration Units: mg/kg Arsenic	Spiked  A DO NOT UP  EP 94-TX  72.1  Concent Spiked  AA DO NOT UP	Measured DATE  88.5 Tration Measured	LCS 123 Accur	75-125

ND = Not Detected



# LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

(cont.)

Analyte	Concentra Spiked M	tion easured	Accur LCS	acy(%) Limits
Category: ICP-IRP-S ICP Metals STATIC QC LIMITS Matrix: SOIL QC Lot: 22 SEP 94-TX QC Run: 22 Concentration Units: mg/kg	- DO NOT UPD SEP 94-TX	ATE		
Aluminum Antimony Arsenic Barium Beryllium Calcium Cadmium Chromium Copper Cobalt Iron Magnesium Manganese Molybdenum Potassium Lead Nickel Selenium Silver Sodium Thallium Vanadium Zinc	3650 75.0 72.1 64.8 26.7 2330 61.6 44.1 78.1 177 7360 2550 141 104 3310 50.9 110 74.2 71.7 346 64.1 83.0 78.2	4270 72.1 76.1 69.6 29.7 2500 63.4 47.4 82.8 193 8350 2750 149 122 3600 53.6 119 71.0 71.0 71.0 34.6 86.7 81.7	117 96 106 107 111 107 103 107 106 109 113 108 109 105 108 96 99 100 97 104	75-140 50-150 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125
Analyte	Concentra Spiked M		Accus LCS	racy(%) Limits
Category: 7841-IRP-S Thallium, Furnace STATIC QC LIMITS Matrix: SOIL QC Lot: 22 SEP 94-TX QC Run: 22 Concentration Units: mg/kg	SEP 94-TX		100	CF 12F
Thallium	64.1	80.9	126	65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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7 392

#### GENERAL INORGANICS



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 01780001 (0.00, 3.00,)

Lab ID:

077682-0001-SA

Matrix: SOIL Authorized: 14 SEP 94

Sampled: 07 SEP 94 Prepared: See Below

Received: 14 SEP 94 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.55	9012 Modified	20 SEP 94	21 SEP 94
Nitrate + Nitrite (as N)	8.3	mg/kg	0.28	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

#### GENERAL INORGANICS



(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 01790001

(0.00, 3.00,)077682-0002-SA

Lab ID: Matrix:

SOIL

Sampled: 07 SEP 94

Received: 14 SEP 94

Prepared: See Below

Analyzed: See Below

Authorized: 14 SEP	94	Prepare	d: See Belo	w Analyzed	: See Belo	W
Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.55	9012 Modified	20 SEP 94	21 SEP 94
Nitrate + Nitrite (as N)	5.6	mg/kg	0.27	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787

394



(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 01790002 (0.00,3.00,)

Lab ID: 077682-0003-SA

Matrix: SOIL Sampled: 07 SEP 94 Received: 14 SEP 94 Authorized: 14 SEP 94 Prepared: See Below Analyzed: See Below

Parameter	Result		Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total Nitrate + Nitrite	ND	mg/kg	0.54	9012 Modified	19 SEP 94	20 SEP 94
(as N)	3.5	mg/kg	0.27	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report.

Rev 230787

395



(Soil/Solid)

Client Name: Gram, Inc.

01800001 Client ID:

(0.00, 3.00,)

Lab ID:

077682-0004-SA

SOIL Matrix:

Sampled: 07 SEP 94

Received: 14 SEP 94

Authorized: 14 SEP 94

Prepared: See Below

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.53	9012 Modified	19 SEP 94	20 SEP 94
Nitrate + Nitrite (as N)	12.9	mg/kg	0.53	353.2 Modified	26 SEP 94	28 SEP 94 R

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

Note R: Raised reporting limit(s) due to high analyte level(s).

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report. Rev 230787

**( #uanterra** Environmental Services

(Soil/Solid)

Client Name: Gram, Inc.

01930001 Client ID: (0.00, 3.00,)

Lab ID:

077682-0005-SA

Matrix: Authorized: 14 SEP 94

SOIL

Sampled: 08 SEP 94 Prepared: See Below Received: 14 SEP 94 Analyzed: See Below

Dry Weight Reporting Analytical Prepared Analyzed Parameter Result Units Limit Method Date Date ND Cyanide, Total mg/kg 0.54 9012 Modified 19 SEP 94 20 SEP 94 Nitrate + Nitrite (as N) 8.3 mg/kg 0.27 353.2 Modified 26 SEP 94 27 SEP 94

Percent Moisture is 7%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787



(Soil/Solid)

Client Name: Gram, Inc.

00970001 Client ID:

(3.00,6.00,)

Lab ID:

077682-0006-SA

Matrix:

SOIL

Sampled: 09 SEP 94

Received: 14 SEP 94

Authorized: 14 SEP 94

Prepared: See Below

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.57	9012 Modified	19 SEP 94	20 SEP 94
Nitrate + Nitrite (as N)	8.3	mg/kg	0.29	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 13%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 01090001 (3.00, 6.00,)

077682-0007-SA Lab ID:

Sampled: 09 SEP 94 Prepared: See Below Matrix: Received: 14 SEP 94 SOIL 14 SEP 94 Analyzed: See Below Authorized:

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total Nitrate + Nitrite	ND	mg/kg	0.57	9012 Modified	19 SEP 94	20 SEP 94
(as N)	1.7	mg/kg	0.29	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 12%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787



(Soil/Solid)

Client Name: Gram, Inc.

02660001 Client ID:

(2.00, 3.00,)

Lab ID:

077682-0008-SA

Matrix:

SOIL

Authorized: 14 SEP 94

Sampled: 09 SEP 94

Prepared: See Below

Received: 14 SEP 94 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.55	9012 Modified	19 SEP 94	20 SEP 94
Nĭtrate´+ Nitrite (as N)	10.9	mg/kg	0.27	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787

100



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 02960001 (2.50, 4.00,)

Lab ID:

077682-0009-SA

Matrix:

SOIL

14 SEP 94

Sampled: 09 SEP 94 Prepared: See Below

Received: 14 SEP 94

Authorized:

Analyzed: See Below

Parameter	Result ·	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.52	9012 Modified	19 SEP 94	20 SEP 94
Nitrate + Nitrite (as N)	6.5	mg/kg	0.26	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 3%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787



(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 01130001 (0.00,3.00,)

Lab ID: 077682-0010-SA

Matrix: SOIL Sampled: 12 SEP 94 Received: 14 SEP 94
Authorized: 14 SEP 94 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.54	9012 Modified	19 SEP 94	20 SEP 94
Nitrate + Nitrite (as N)	5.0	mg/kg	0.27	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787

T-400



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 01200001 (0.00, 3.00,)

Lab ID: 077682-0011-SA

Matrix: SOIL Sampled: 12 SEP 94 Received: 14 SEP 94 Authorized: 14 SEP 94 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total Nitrate + Nitrite	ND	mg/kg	0.57	9012 Modified	19 SEP 94	20 SEP 94
(as N)	4.1	mg/kg	0.28	353.2 Modified	26 SEP 94	27 SEP 94

Percent Moisture is 12%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787





(Water)

Client Name: Gram, Inc.

Client ID: 03140001 (0.00,0.00,)

Lab ID: 077682-0012-SA

Matrix: AQUEOUS Sampled: 13 SEP 94 Received: 14 SEP 94
Authorized: 14 SEP 94 Prepared: See Below Analyzed: See Below

Prepared Analyzed Analytical Reporting Method Date Date Result Units Limit Parameter 19 SEP 94 20 SEP 94 9012 Modified Cyanide, Total Nitrate + Nitrite ND mg/L 0.010 27 SEP 94 353.2 NA 0.64 0.050 (as N) mg/L

ND = Not detected NA = Not applicable

Reported By: Larry Tellers

Approved By: Lisa Upton

The cover letter is an integral part of this report. Rev 230787

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# QC LOT ASSIGNMENT REPORT Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
	QC Matrix  SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOI	QC Category  NO3&NO2-S CN-IRP-S NO3&NO2-S		
077682-0010-SA	SOIL	CN-IRP-S	19 SEP 94-A	19 SEP 94-A
077682-0011-SA	SOIL	NO3&NO2-S	26 SEP 94-A	26 SEP 94-A
077682-0011-SA	SOIL	CN-IRP-S	19 SEP 94-A	19 SEP 94-A
077682-0012-SA	AQUEOUS	NO3&NO2-A	27 SEP 94-AX	27 SEP 94-AX
077682-0012-SA	AQUEOUS	CN-A	19 SEP 94-A	19 SEP 94-A



# METHOD BLANK REPORT Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: NO3&NO2-S Matrix: SOIL QC Lot: 26 SEP 94-A QC Run: 2	26 SEP <b>94</b> -A		
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 20 SEP 94-A QC Run: 2	20 SEP <b>94</b> -A		
Cyanide, Total	- ND	mg/kg	0.50
Test: NO3&NO2-S Matrix: SOIL QC Lot: 26 SEP 94-A QC Run: 2	26 SEP <b>94</b> -A		
Nitrate + Nitrite (as N)	ND	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 20 SEP 94-A QC Run: 2	20 SEP 94-A		
Cyanide, Total	ND	mg/kg	0.50
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 19 SEP 94-A QC Run: 1	19 SEP <b>94</b> -A		
Cyanide, Total	ND .	mg/kg	0.50
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 19 SEP 94-A QC Run: 1	19 SEP 94-A		
Cyanide, Total	ND	mg/kg	0.50



METHOD BLANK REPORT Wet Chemistry Analysis and Preparation (cont.)

Reporting Limit Units Result Analyte

Test: NO3+NO2-A

Matrix: AQUEOUS QC Lot: 27 SEP 94-AX QC Run: 27 SEP 94-AX

Nitrate + Nitrite ND mg/L 0.050 (as N)

Test: CN-9012-AT

Matrix: AQUEOUS QC Lot: 19 SEP 94-A QC Run: 19 SEP 94-A

ND 0.010 mg/L Cyanide, Total



LABORATORY CONTROL SAMPLE REPORT Wet Chemistry Analysis and Preparation

Concentration Accuracy(%)
Analyte Spiked Measured LCS Limits

Category: NO3&NO2-A Nitrate plus nitrite

STATIC QC LIMTS - DO NOT UPDATE

Matrix: AQUEOUS

QC Lot: 27 SEP 94-AX QC Run: 27 SEP 94-AX

Concentration Units: mg/L

Nitrate + Nitrite (as N) 0.500 0.515 103 90-110

Concentration Accuracy(%)
Analyte Spiked Measured LCS Limits

Category: CN-A Cyanide

Matrix: AQUEOUS

QC Lot: 19 SEP 94-A QC Run: 19 SEP 94-A

Concentration Units: mg/L

Cyanide, Total 0.100 0.0980 98 73-111

Concentration Accuracy(%)
Analyte Spiked Measured LCS Limits

Category: NO3&NO2-S Nitrate plus nitrite for soil/solid/waste matrices.

Matrix: SOIL

OC Lot: 26 SEP 94-A OC Run: 26 SEP 94-A

Concentration Units: mg/kg

Nitrate + Nitrite (as N) 2.50 2.49 100 75-125

Concentration Accuracy(%)
Analyte Spiked Measured LCS Limits

Category: CN-IRP-S Cyanide

Matrix: SOIL

QC Lot: 20 SEP 94-A QC Run: 20 SEP 94-A

Concentration Units: mg/kg

Cyanide, Total 5.00 4.55 91 77-115

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

1.408



Accuracy(%) LCS Limits

LABORATORY CONTROL SAMPLE REPORT Wet Chemistry Analysis and Preparation

(cont.)

Concentration Spiked Measured Analyte

Category: CN-IRP-S Matrix: SOIL Cyanide

19 SEP 94-A QC Run: 19 SEP 94-A QC Lot:

Concentration Units: mg/kg

98 77-115 4.90 5.00 Cyanide, Total

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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1-410



Quanterra Incorporated 880 Riverside Parkway West Sacramento, California 95605

916 373-5600 Telephone 916 372-1059 Fax

October 12, 1994

QUANTERRA PROJECT NUMBER: 077730

PO/CONTRACT: 006

Jeff Johnson Gram, Inc. 8500 Menaul Blvd. NE, #B-370 Albuquerque, NM 87112

Dear Mr. Johnson:

This report contains the analytical results for the thirteen soil samples which were received under chain of custody by Quanterra West Sacramento on 17 and 21 September 1994. These samples are associated with your Kirtland Air Force Base project.

The case narrative is an integral part of this report.

If you have any questions, please call me at (916) 374-4362.

Sincerely,

Diana L. Brooks Project Manager

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Method Blank Report

Laboratory Control Sample Report (LCS)

Nitroaromatics and Nitramines by HPLC - Method 8330

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## CASE NARRATIVE

# **QUANTERRA PROJECT NUMBER 077730**

#### **General Comments**

The temperature blank associated with your samples was recorded as 2.1 degrees C.

# Semivolatile Organics - Method 8270

The Laboratory Control Sample (LCS) was found o have 3-Nitroaniline above the control limits. There were no positive results found in the samples, thus no corrective actions were necessary.

The Laboratory Control Sample (LCS) has benzoic acid report as NA. The actual value recovery (43%) is within the control limits. Noted in the QAPjP, this compound is flagged for a variance.

Due to electronic deliverable limitations, the library search data is available in hardcopy only.

# Selected Metals - Various Methods

Analysis of thallium was performed by graphite furnace in order to achieve detection level required by the QAPjP.

No other anomalies were associated with this report.



# QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documental quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

# Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

Single Control Samples. An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.



# SAMPLE DESCRIPTION INFORMATION for Gram, Inc.

Lab ID	Client ID		Matrix	Sampled Date Time	Received Date
077730-0001-SA 077730-0002-SA 077730-0003-SA 077730-0004-SA 077730-0006-SA 077730-0007-SA 077730-0008-SA 077730-0009-SA 077730-0010-SA 077730-0011-SA 077730-0012-SA	00460001 00470001 00470002 00490001 00760001 00090001 00130001 00250001 00350001 01360001 01400001 02150001	(3.00,6.00,) (3.00,6.00,) (3.00,6.00,) (3.00,6.00,) (3.00,6.00,) (6.00,9.00,) (0.00,3.00,) (0.00,3.00,) (2.50,6.00,) (2.50,6.00,) (2.50,5.00,) (3.00,6.00,)	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	12 SEP 94 13:10 12 SEP 94 13:10 12 SEP 94 13:10 12 SEP 94 13:10 13 SEP 94 13:45 14 SEP 94 09:30 14 SEP 94 10:05 14 SEP 94 12:45 14 SEP 94 10:51 15 SEP 94 10:51 15 SEP 94 08:15 15 SEP 94 10:30	17 SEP 94 17 SEP 94 17 SEP 94 17 SEP 94 17 SEP 94 17 SEP 94 17 SEP 94 21 SEP 94 21 SEP 94 21 SEP 94

# CHAIN OF CUSTODY

3 WATE ! TIME TIME 24:15 NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK 823535472 4. W 54 Supple ID 9/20 DATE DATE BILL OF LADING # ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY ing by leach 150000 SIGNATURE SIGNATURE LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) RECEIVED BY SHIPPER: EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) SIGNATURE RECEIVED BY LABORATORY: 2001 7°7 S RECEIVED BY: NITRATE + NITRITE (E353.2) nzo 80 LABORATORY ANALYSES: 150 ANALYSES REQUESTED **TYPE OF CONTAINERS** COLLECTED CONTAINER VOLUME DATE/TIME GRAM, TLC # OF CONTAINERS • COMPANY NAME COMPANY NAME PRESERVATIVE SEMI-VOCs (SW8270) MERCURY (SW7471) COMPANY NAME CYANIDE (SW9012) 78/61 4/2/15 14 14 46/21/5 アプレ MATRIX PHILLIPS LABORATORY, KIRTLAND AFB 4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL JEFF JOHNSON (GRAM) 505-299-1282 NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT STEVE GORIN (LATA) 505-880-3439 ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1 - 7) Tappe SIGNATURE SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): RELEASED TO SHIPPER BY: CONTAINER TYPES McCORMICK RANCH P. POLYETHYLENE AG - AMBER GLASS CG - CLEAR GLASS RELINQUISHED BY: 000 000 との人 000 000 SITE ID, LOCATION ID, SAMPLE ID) SAMPLE IDENTIFICATION 0 LABORATORY CONTACT: SECONDARY CONTACT: PRIMARY CONTACT: M COMPANY NAME PROJECT NAME: COMPANY NAME COMPANY NAME J.W. C Ø KRTLD154-D KRTLD154 KRTLD154-KRTLD154 -CRILDIS4. KRTLD154-KRTLD154 KRTLD154. CRTLD154. KRTLD154 KRTLD154 W-WATER O-OTHER **MATRIX**: S-SOIL.

# **CHAIN OF CUSTODY**

Cooler tomp = 2.12.
Sampler reid in good.
Condurain. 1403 TIME DATE TIME 3 NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK ø DATE BILL OF LADING # DATE 9/16 1-1600 jur for each sprop 1 jury S 7835 4H I. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY 304-20-SIGNATURE SIGNATURE LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) RECEIVED BY SHIPPER: .. EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) RECEIVED BY LABORATORY: SIGNATURE 1600 J + 2 b RECEIVED BY: 2. NITRATE + NITRITE (E353.2) CIE (345) ~60 hJ/h// 2 SH21 H3/H/15 9/14/64 140c (37) 5000 #6/h1/5 LABORATORY ANALYSES: श्रिष्टी त्रा ANALYSES REQUESTED TYPE OF CONTAINERS COLLECTED CONTAINER VOLUME DATE/TIME COMPANY NAME COMPANY NAME COMPANY NAME 3. SEMI-VOCs (SW8270) # OF CONTAINERS • MERCURY (SW7471) PRESERVATIVE CYANIDE (SW9012) GRAMITAS 19/12/14 3 アカイ 12/15 MATRIX PHILLIPS LABORATORY, KIRTLAND AFB ्रिफ्फ IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL OTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT JEFF JOHNSON (GRAM) 505-299-1282 STEVE GORIN (LATA) 505-880-3439 IALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE E IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-1) SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): SIGNATURE RELEASED TO SHIPPER BY: CONTAINER TYPES P - POLYETHYLENE McCORMICK RANCH AG - AMBER GLASS CG - CLEAR GLASS RELINQUISHED BY: 000 900 Q C C 0 000 0 FE ID, LOCATION ID, SAMPLE ID)  $\sigma$ 0 SAMPLE IDENTIFICATION ABORATORY CONTACT: SECONDARY CONTACT: COMPANY NAME PRIMARY CONTACT: COMPANY NAME COMPANY NAME 00 PROJECT NAME: Ō 0 O C 0 **(**) CLIENT: 0 0 TLD154-O 200 TLD154 TLD154-₹TLD154-TLD154-TLD154 -TLD154-TLD154 -TLD154 -F (TLD154 ₹TLD154 . WATER OTHER soir. ATRIX:

### Method 8321

Client Name: Gram, Inc. Client ID: 00460001 (3.00,6.00,)

077730-0001-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787



#### Method 8321

PETN

Client Name: Gram, Inc. Client ID: 00470001 (3.00,6.00,)

077730-0002-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Reporting Dry Wt. Units Limit Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 mg/kg ND

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

# Method 8321

Client Name: Gram, Inc. Client ID: 00470002 (3.00,6.00,)

077730-0003-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 Matrix: SOIL 17 SEP 94 Authorized:

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

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#### Method 8321

Client Name: Gram, Inc.

(3.00, 6.00,)00490001 Client ID:

077730-0004-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: 17 SEP 94 Authorized:

Reporting Dry Wt. Units Limit Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 ND mg/kg PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

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#### Method 8321

Client Name: Gram, Inc. Client ID: 00090001 (3.00,6.00,)

077730-0006-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 14 SEP 94 Prepared: 24 SEP 94 Matrix: SOIL 17 SEP 94 Authorized:

Reporting Limit Dry Wt. Units Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 mg/kg ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

7-423

#### Method 8321

Client Name: Gram, Inc. Client ID: 00760001

(3.00,6.00,)

Lab ID:

PETN

077730-0005-SA

SOIL

Sampled: 13 SEP 94

ND

mg/kg

Received: 17 SEP 94 Analyzed: 28 SEP 94

Matrix: Authorized:

17 SEP 94

Prepared: 24 SEP 94

Reporting Dry Wt. Limit Units Result Parameter 0.50 mg/kg Nitroglycerin ND 0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

I-424

#### Method 8321

Client Name: Gram, Inc. Client ID: 00130001 (6.00,9.00,)

077730-0007-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 14 SEP 94 Prepared: 24 SEP 94 Matrix: SOIL Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

1-425



### Method 8321

Client Name: Gram, Inc.

(0.00, 3.00,)00250001 Client ID:

077730-0008-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 14 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Dry Wt. Units Reporting Limit Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 mg/kg ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

T-426

# Method 8321

Client Name: Gram, Inc. Client ID: 00350001 (0.00, 3.00,)

077730-0009-SA Lab ID:

Received: 17 SEP 94 Analyzed: 28 SEP 94 Sampled: 14 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: 17 SEP 94 Authorized:

Dry Wt. Units Reporting Limit Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 mg/kg ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

1-427



Method 8321

Client Name: Gram, Inc. Client ID: 01360001 (2.50,6.00,)

077730-0010-SA Lab ID:

Received: 21 SEP 94 Analyzed: 28 SEP 94 Sampled: 15 SEP 94 SOIL Matrix: Prepared: 24 SEP 94 17 SEP 94 Authorized:

Reporting Limit Dry Wt. Units Result Parameter 0.50 mg/kg ND Nitroglycerin 0.50 mg/kg ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

# Method 8321

Client Name: Gram, Inc. Client ID: 01400001 Lab ID: 077730-001 (2.50,6.00,)

077730-0011-SA

Matrix:

SOIL

Received: 21 SEP 94 Analyzed: 28 SEP 94

Authorized: 17 SEP 94

Sampled: 15 SEP 94 Prepared: 24 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
Nitroglycerin	ND	mg/kg	0.50
PETN	ND	mg/kg	0.50

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787



#### Method 8321

Client Name: Gram, Inc.

(2.50,5.00,) 02150001 Client ID:

077730-0012-SA Lab ID:

Received: 21 SEP 94 Analyzed: 29 SEP 94 Sampled: 15 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Dry Wt. Units Reporting Limit Result Parameter mg/kg 0.50 ND Nitroglycerin mg/kg 0.50 ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787





## Specialty Explosives by HPLC/MS

#### Method 8321

Client Name: Gram, Inc. Client ID: 02250001 Lab ID: 077730-0013-SA (3.00,6.00,)

Received: 21 SEP 94 Analyzed: 29 SEP 94 Sampled: 15 SEP 94 Prepared: 24 SEP 94 Matrix: SQIL Authorized: 17 SEP 94

Dry Wt. Units Reporting Limit Result Parameter 0.50 mq/kg ND Nitroglycerin 0.50 mg/kg ND PETN

ND = Not detected NA = Not applicable

Reported By: Mike Filigenzi

Approved By: Karla Buechler



## QC LOT ASSIGNMENT REPORT Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	(SCS/BLANK)
077730-0001-SA 077730-0002-SA 077730-0003-SA 077730-0004-SA 077730-0006-SA 077730-0007-SA 077730-0008-SA 077730-0009-SA 077730-0010-SA 077730-0011-SA 077730-0012-SA 077730-0013-SA	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S 8321-IRP-S	23 SEP 94-7C	23 SEP 94-7C 23 SEP 94-7C



## METHOD BLANK REPORT Special Services - LC Mass Spectrometry

Analyte		Result	Units	Reporting Limit
Test: 8321-IRP-EXP-S Matrix: SOIL QC Lot: 23 SEP 94-7C Nitroglycerin PETN	QC Run:	23 SEP 94-7C  ND ND	mg/kg mg/kg	0.50 0.50
Test: 8321-IRP-EXP-S Matrix: SOIL QC Lot: 23 SEP 94-7C Nitroglycerin PETN	QC Run:	23 SEP 94-7C ND ND	mg/kg mg/kg	0.50 0.50



LABORATORY CONTROL SAMPLE REPORT Special Services - LC Mass Spectrometry Project: 077730

Category: 8321-IRP-S Explosives by HPLC/MS Matrix: SOIL QC Run: 23 SEP 94-7C

Concentration Units: mg/kg

Analyte	Concentratio	on	Accur	racy(%)
	Spiked Meas	sured	LCS	Limits
Nitroglycerin	5.00	6.61	132	65-135
PETN	2.50	2.92	117	65-135

ND = Not Detected



#### Method 8330

Client Name: Gram, Inc. Client ID: 00460001 (3.00,6.00,)

Lab ID:

077730-0001-SA SOIL Received: 17 SEP 94 Analyzed: 30 SEP 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



#### Method 8330

Client Name: Gram, Inc. Client ID: 00470001 (3.00, 6.00,)

077730-0002-SA Lab ID:

Received: 17 SEP 94 Analyzed: 01 OCT 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

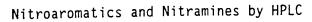
ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

I-436





#### Method 8330

Client Name: Gram, Inc.

(3.00,6.00,)00470002 Client ID:

Lab ID:

077730-0003-SA

Received: 17 SEP 94 Analyzed: 01 OCT 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene		mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



#### Method 8330

Client Name: Gram, Inc. Client ID: 00490001 (3.00,6.00,)

077730-0004-SA Lab ID:

Received: 17 SEP 94 Analyzed: 01 OCT 94 Sampled: 12 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



#### Method 8330

Client Name: Gram, Inc. Client ID: 00760001

(3.00,6.00,)

Lab ID:

077730-0005-SA

Matrix:

Received: 17 SEP 94 Analyzed: 04 OCT 94

SOIL Authorized: 17 SEP 94 Sampled: 13 SEP 94 Prepared: 24 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



#### Method 8330

Client Name: Gram, Inc. Client ID: 00090001 (3.00,6.00,) Client ID:

077730-0006-SA Lab ID:

Received: 17 SEP 94 Analyzed: 04 OCT 94 Sampled: 14 SEP 94 Prepared: 24 SEP 94 Matrix: SOIL Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

1.40



#### Method 8330

Client Name: Gram, Inc. Client ID: 00130001 (6.00,9.00,)

077730-0007-SA Lab ID:

Received: 17 SEP 94 Analyzed: 04 OCT 94 Sampled: 14 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I-441



#### Method 8330

Client Name: Gram, Inc. Client ID: 00250001 (0.00, 3.00,)

Lab ID: 077730-0008-SA

Received: 17 SEP 94 Analyzed: 04 OCT 94 Sampled: 14 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



#### Method 8330

Client Name: Gram, Inc. Client ID: 01360001 (2.50,6.00,)

077730-0010-SA Lab ID:

Received: 21 SEP 94 Analyzed: 04 OCT 94 Sampled: 15 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



#### Method 8330

Client Name: Gram, Inc. Client ID: 00350001 (0.00,3.00,)

077730-0009-SA Lab ID:

Sampled: 14 SEP 94 Prepared: 24 SEP 94 Received: 17 SEP 94 SOIL Matrix: Analyzed: 04 OCT 94 Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



#### Method 8330

Client Name: Gram, Inc. Client ID: 01400001 (2.50,6.00,)

077730-0011-SA Lab ID:

Received: 21 SEP 94 Analyzed: 04 OCT 94 Sampled: 15 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report. Rev 230787

J= 4145



#### Method 8330

Client Name: Gram, Inc. Client ID: 02150001 (2.50, 5.00,)

077730-0012-SA Lab ID:

Received: 21 SEP 94 Analyzed: 04 OCT 94 Sampled: 15 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND	mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler

The cover letter is an integral part of this report.

Rev 230787

I 46



#### Method 8330

Client Name: Gram, Inc. Client ID: 02250001

(3.00,6.00,)

077730-0013-SA Lab ID:

Received: 21 SEP 94 Analyzed: 04 OCT 94 Sampled: 15 SEP 94 Prepared: 24 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Wt. Units	Reporting Limit
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	ND	mg/kg	0.25
	ND	mg/kg	

ND = Not detected NA = Not applicable

Reported By: Dennis Gall

Approved By: Karla Buechler



## QC LOT ASSIGNMENT REPORT Special Services - LC Mass Spectrometry

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077730-0001-SA 077730-0002-SA 077730-0003-SA 077730-0004-SA 077730-0005-SA 077730-0006-SA 077730-0008-SA 077730-0009-SA 077730-0010-SA 077730-0011-SA 077730-0012-SA 077730-0013-SA	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S 8330-IRP-S	23 SEP 94-7B	23 SEP 94-7B 23 SEP 94-7B



## METHOD BLANK REPORT Special Services - LC Mass Spectrometry

Analyte	Result	Units	Reporting Limit
Test: 8330-IRP-KAFB-1C-S Matrix: SOIL QC Lot: 23 SEP 94-7B QC Run:	23 SEP 94-7B		
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25
Test: 8330-IRP-KAFB-1C-S Matrix: SOIL QC Lot: 23 SEP 94-7B QC Run:	23 SEP 94-7B		
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Nitrotoluene 3-Nitrotoluene 4-Nitrotoluene	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25



LABORATORY CONTROL SAMPLE REPORT Special Services - LC Mass Spectrometry

Project: 077730

Category: 8330-IRP-S Explosives by HPLC Matrix: SOIL QC Lot: 23 SEP 94-7B QC Run: 23 SE

QC Run: 23 SEP 94-7B

Concentration Units: mg/kg

	Concent	ration	Accuracy(%)	
Analyte		Measured	LCS	Limits
HMX sym-Trinitrobenzene RDX 1,3-Dinitrobenzene Nitrobenzene 2,4,6-Trinitrotoluene Tetryl 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2-Am-DNT 4-Am-DNT 2-Nitrotoluene 4-Nitrotoluene 3-Nitrotoluene	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.886 0.937 0.868 0.891 0.875 0.898 1.05 0.860 0.885 0.882 0.884 0.922	89 94 87 89 88 90 105 86 88 88 92 96	75-107 65-135 70-99 74-99 71-95 75-107 65-135 72-106 66-102 77-101 77-108 72-97 67-110 75-104

ND = Not Detected



#### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 00460001 (3.00, 6.00,)

077730-0001-SA Lab ID:

Received: 17 SEP 94 Analyzed: 06 OCT 94 Sampled: 12 SEP 94 Prepared: 21 SEP 94 Matrix: SOIL Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene Acenaphthylene	ND ND	mg/kg mg/kg	0.74 0.74
Anthracene	ND ND	mg/kg	0.74 0.74
Benzo(a)anthracene	ND ND	mg/kg mg/kg	0.74
Benzo(a)pyrene Benzo(b)fluoranthene	ND	mg/kg	0.74
Benzo(g,h,i)perylene	ND	mg/kg	0.74
Benzo(k)fluoranthene	ND	mg/kg	0.74
Benzoic acid	ND	mg/kg	1.7
Benzyl alcohol	ND	mg/kg	1.4
4-Bromophenyl	AID.	ma /lea	0.74
phenyl ether	ND ND	mg/kg mg/kg	0.74
Butyl benzyl phthalate 4-Chloroaniline	ND	mg/kg	1.4
2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.74
bis(2-Chloroethoxy)-		5/5	
methane	ND	mg/kg	0.74
bis(2-Chloroethyl) ether	ND	mg/kg	0.74
4-Chloro-3-methylphenol	ND	mg/kg	1.4
2-Chloronaphthalene	ND	mg/kg	0.74
2-Chlorophenol	ND	mg/kg	0.35
4-Chlorophenyl	ND	mg/kg	0.74
phenyl ether Chrysene	ND	mg/kg	0.74
Di-n-butyl phthalate	ND	mg/kg	0.74
Dibenz(a,h)anthracene	ND	mg/kg	0.74
Dibenzofuran	ND	mg/kg	0.74
1,2-Dichlorobenzene	ND	mg/kg	0.74
1,3-Dichlorobenzene	ND	mg/kg	0.74
1,4-Dichlorobenzene	ND	mg/kg	0.74 1.4
3,3'-Dichlorobenzidine	ND ND	mg/kg	0.35
2,4-Dichlorophenol Diethyl phthalate	ND	mg/kg mg/kg	0.74
2,4-Dimethylphenol	ND	mg/kg	0.35
Dimethyl phthalate	ND	mg/kg	0.74
4,6-Dinitro-		5/5	
2-methylphenol	ND	mg/kg	3.5
2,4-Dinitrophenol	ND	mg/kg	3.5
2,4-Dinitrotoluene	ND	mg/kg	0.74
2,6-Dinitrotoluene	ND	mg/kg	0.74
Di-n-octyl phthalate	ND	mg/kg	0.74

(continued on following page)

ND = Not detected NA = Not applicable

Reported By: Donald Taylor Approved By: Steve Rogers



#### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 00460001 (3.00,6.00,) Client ID:

077730-0001-SA Lab ID:

Received: 17 SEP 94 Analyzed: 06 OCT 94 Sampled: 12 SEP 94 Prepared: 21 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitrosodiphenylamine	ND ND ND ND ND ND ND ND ND ND ND ND ND N	mg/kkyggg/kkkykkygg/kkkykykygg/kkkykyggg/kkkykyggg/kkkykygggg/kkkykyggg/kkykyggg/kyggg/kyggg/kygggg/k	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.35 0.35 0.35 0.35 0.35
N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND 46 ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.74 3.5 0.74 0.35 0.74 0.74 3.5
Surrogate	Recovery		
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	75 86 116 90 80 94	% % % %	

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers



#### Semivolatiles Library Search (20 Compound TID)

#### Method 8270

(3.00,6.00,)

Client Name: Gram, Inc. Client ID: 00460001 Lab ID: 077730-0001-SA

Received: 17 SEP 94 Analyzed: 06 OCT 94 Sampled: 12 SEP 94 SOIL Matrix: Authorized: 17 SEP 94 Prepared: NA

			Reporting
Parameter	Result	Units	Limit
Heptane, 2,4-dimethyl-	340	ug/kg	
Unknown lactone	<b>5</b> 30	ug/kg	
Unknown ketone	1500	ug/kg	
Unknown oxygenated compound	1800	ug/kg	
Unknown oxygenated compound	6800	ug/kg	
Unknown	620	ug/kg	
Unknown alkane	700	ug/kg	
Unknown alkane	850	ug/kg	
Unknown	830	ug/kg	
Pentacosane	1100	ug/kg	
Unknown alkane	970	ug/kg	
Unknown alkane	1100	ug/kg	
Unknown	910	ug/kg	
Unknown alkane	770	ug/kg	
Unknown alkane	790	ug/kg	
Unknown alkane	470	ug/kg	
Unknown alkane	550	ug/kg	
Unknown hopane	430	ug/kg	
Unknown alkane	370	ug/kg	
Unknown	400	ug/kg	

ND = Not detected NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

T-4153



#### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 00490001 (3.00,6.00,)

077730-0004-SA Lab ID:

Received: 17 SEP 94 Analyzed: 06 OCT 94 Sampled: 12 SEP 94 Prepared: 21 SEP 94 SOIL Matrix: Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Benzoic acid Benzyl alcohol	ND	mg/kg	0.74
	ND	mg/kg	1.7
4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroaniline 2,2'-Oxybis(1-chloropropane)	ND	mg/kg	0.74
	ND	mg/kg	0.74
	ND	mg/kg	1.4
	ND	mg/kg	0.74
bis(2-Chloroethoxy)- methane bis(2-Chloroethyl) ether 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol	ND	mg/kg	0.74
	ND	mg/kg	0.74
	ND	mg/kg	1.4
	ND	mg/kg	0.74
	ND	mg/kg	0.35
4-Chlorophenyl phenyl ether Chrysene Di-n-butyl phthalate Dibenz(a,h)anthracene Dibenzofuran 1,2-Dichlorobenzene 1,3-Dichlorobenzene 3,3'-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate 2,4-Dimethyl phthalate	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.74 0.74 0.74 0.74 0.74 0.74 0.74 1.4 0.35 0.74
4,6-Dinitro- 2-methylphenol 2,4-Dinitrophenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene Di-n-octyl phthalate	ND	mg/kg	3.5
	ND	mg/kg	3.5
	ND	mg/kg	0.74
	ND	mg/kg	0.74
	ND	mg/kg	0.74

(continued on following page)

ND = Not detected NA = Not applicable

Approved By: Steve Rogers Reported By: Donald Taylor



#### Semivolatile Organics

Method 8270

Client Name: Gram, Inc. Client ID: 00490001 (3.00,6.00,)

077730-0004-SA Lab ID:

Received: 17 SEP 94 Analyzed: 06 OCT 94 Sampled: 12 SEP 94 Prepared: 21 SEP 94 Matrix: SOIL Authorized: 17 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note J: Result is detected below the reporting limit or is an estimated concentration.

ND = Not detected NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

The cover letter is an integral part of this report.

Rev 230787

1-455

# Services

#### Semivolatile Organics

#### Method 8270

Client Name: Gram, Inc. Client ID: 00490001 (3.00,6.00,) Client ID:

077730-0004-SA Lab ID:

Sampled: 12 SEP 94 Prepared: 21 SEP 94 Received: 17 SEP 94 SOIL Matrix: Analyzed: 06 OCT 94 Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline Nitrobenzene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	mg/kg mg/kg mg/kg mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	0.74 0.74 0.74 0.74 0.74 0.74 0.74 0.74	J
2-Nitrophenol 4-Nitrophenol	ND ND ND	mg/kg mg/kg mg/kg	0.35 1.7 0.74	
N-Nitrosodiphenylamine N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND O.046 ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.74 3.5 0.74 0.35 0.74 0.74 3.5 0.35	J
Surrogate	Recovery			
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	83 87 124 92 85 100	% % % %		

(continued on following page)

ND = Not detected NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers

## Semivolatiles Library Search (20 Compound TID)



#### Method 8270

Client Name: Gram, Inc. Client ID: 00490001

(3.00,6.00,)

077730-0004-SA Lab ID:

Sampled: 12 SEP 94 Prepared: NA Received: 17 SEP 94 Analyzed: 06 OCT 94 Matrix: SOIL Authorized: 17 SEP 94

Parameter	Result	Units	Reporting Limit
		4.	
Heptane, 2,4-dimethyl-	370	ug/kg	** **
Octane, 3-methyl-	240	ug/kg	
Unknown lactone	410	ug/kg	
Unknown ketone	1600	ug/kg	
Unknown oxygenated compound	1900	ug/kg	
Unknown oxygenated compound	6300	ug/kg	
Unknown alkane	240	ug/kg	
Sulfur, mol. (S8)	7600	ug/kg	
Unknown alkane	590	ug/kg	
Unknown alkane	950	ug/kg	
Pentacosane	1500	ug/kg	
Unknown alkane	1000	ug/kg	
Unknown alkane	1500	ug/kg	
Unknown	690	ug/kg	
Unknown alkane	1000	ug/kg	
Unknown alkane	930	ug/kg ug/kg	
	600	ug/kg	
Unknown alkane		ug/kg	
Unknown alkane	630	ug/kg	
Unknown alkane	250	ug/kg	
Unknown	280	ug/kg	

ND = Not detected NA = Not applicable

Reported By: Donald Taylor

Approved By: Steve Rogers



QC LOT ASSIGNMENT REPORT Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
077730-0001-SA	SOIL	8270-IRPSL	21 SEP 94-11A	21 SEP 94-11A
077730-0004-SA	SOIL	8270-IRPSL	21 SEP 94-11A	21 SEP 94-11A

J-458



## METHOD BLANK REPORT Semivolatile Organics by GC/MS

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S Matrix: SOIL QC Lot: 21 SEP 94-11A QC Run:	21 SEP 94-11A		
Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(k)fluoranthene Benzoic acid Benzyl alcohol	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.70 0.70 0.70 0.70 0.70 0.70 0.70 1.6 1.3
4-Bromophenyl phenyl ether Butyl benzyl phthalate 4-Chloroaniline 2,2'-Oxybis(1-chloropropane)	ND ND ND ND	mg/kg mg/kg mg/kg mg/kg	0.70 0.70 1.3 0.70
bis(2-Chloroethoxy)- methane bis(2-Chloroethyl) ether 4-Chloro-3-methylphenol 2-Chloronaphthalene 2-Chlorophenol	ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg	0.70 0.70 1.3 0.70 0.33
4-Chlorophenyl phenyl ether Chrysene Di-n-butyl phthalate Dibenz(a,h)anthracene Dibenzofuran 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzidine 2,4-Dichlorophenol Diethyl phthalate	ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.70 0.70 0.70 0.70 0.70 0.70 0.70 1.3 0.33 0.70
2,4-Dimethylphenol Dimethyl phthalate 4,6-Dinitro- 2-methylphenol 2,4-Dinitrophenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene Di-n-octyl phthalate	ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.33 0.70 3.3 3.3 0.70 0.70



## METHOD BLANK REPORT Semivolatile Organics by GC/MS (cont.)

Analyte	Result	Units	Reporting Limit
Test: 8270-IRPMS-L-S Matrix: SOIL QC Lot: 21 SEP 94-11A QC Run:	21 SEP 94-11A		
bis(2-Ethylhexyl)- phthalate Fluoranthene Fluorene Hexachlorobenzene Hexachlorobenzene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol 4-Methylphenol Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitrobenol Nitrosodiphenylamine	ND ND ND ND ND ND ND ND ND ND ND ND ND N	mg/kyg mg/kkgg mgg/kkygg mgg/kkgg mgg/kkygg mgg/kkygg mgg/kkgg mgg/kygg mgg/kygg	0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70
N-Nitroso-di- n-propylamine Pentachlorophenol Phenanthrene Phenol Pyrene 1,2,4-Trichlorobenzene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	0.70 3.3 0.70 0.33 0.70 0.70 3.3 0.33



LABORATORY CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS Project: 077730

Category: 8270-IRPSL Semivolatile Organics (Contain all compounds for IRPMS Low soil)

QC Lot:

QC Lot: 21 SEP 94-11A QC Run: 21 SEP 94-11A Concentration Units: mg/kg

A = - 3 A =	Concentra		Accur LCS	acy(%) Limits
Analyte	Spiked Mo	easureu	LUS	LIMICS
Pheno1	6.70	4.95	74	41-123
bis(2-Chloroethyl) ether	3.30	2.63	80	43-117
2-Chlorophenol	6.70	5.00	75	44-116
1,3-Dichlorobenzene	3.30	2.62	<u>79</u>	39-106
1,4-Dichlorobenzene	3.30	2.61	79	40-106
Benzyl alcohol	3.30	2.88	87 82	37-125
1,2-Dichlorobenzene	3.30	2.69	82 75	40-107 44-128
2-Methylphenol	6.70	5.01	/5	44-120
2,2'-0xybis(1-	3.30	2.71	82	38-116
chloropropane)	6.70	5.55	83	36-138
4-Methylphenol N-Nitroso-di-	0.70	5.55	03	50 150
n-propylamine	3.30	2.92	88	43-123
Hexachloroethane	3.30	2.67	81	39-106
Nitrobenzene	3.30	2.83	86	35-180
Isophorone	3.30	2.30	70	20-134
2-Nitrophenol	6.70	5.00	75	40-128
2,4-Dimethylphenol	6.70	5.01	75	38-127
Benzoic acid	6.70	ND	NC	1-137
bis(2-Chloroethoxy)-				40 117
methane _	3.30	2.67	81	40-117
2,4-Dichlorophenol	6.70	4.74	71	34-129
1,2,4-Trichlorobenzene	3.30	2.54	77	36-114 41-108
Naphthalene	3.30	2.33	71 34	0-63
4-Chloroaniline	3.30 3.30	1.13 2.63	80	33-114
Hexachlorobutadiene	6.70	5.96	89	33-114
4-Chloro-3-methylphenol 2-Methylnaphthalene	3.30	2.44	74	0-197
Hexachlorocyclopentadiene	3.30	2.30	70 70	29-111
2,4,6-Trichlorophenol	6.70	5.21	78	41-132
2,4,5-Trichlorophenol	6.70	5.38	80	36-129
2-Chloronaphthalene	3.30	2.61	79	40-119
2-Nitroaniline	3.30	3.26	99	45-129
Dimethyl phthalate	3.30	2.80	85	48-116
Acenaphthylene	3.30	2.45	74	43-114
2,6-Dinitrotoluene	3.30	3.17	96	44-127
3-Nitroaniline	3.30	5.93	180	0-119
Acenaphthene	3.30	2.42	73	41-113
2,4-Dinitrophenol	6.70	6.60	99 121	0-139 41-144
4-Nitrophenol	6.70	8.08	121	41-144
N = Not Calculated, calculation not ap	pricable.			
N = Not Detected				

ND = Not Detected



(cont.)

LABORATORY CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS

Project: 077730

(cont.)

Category: 8270-IRPSL Semivolatile Organics (Contain all compounds for IRPMS Low soil)

Matrix: SOIL

21 SEP 94-11A QC Run: 21 SEP 94-11A QC Lot:

Concentration Units: mg/kg

	Concentration		Accur	acy(%)
Analyte		Measured	LCS	
Dibenzofuran 2,4-Dinitrotoluene Diethyl phthalate Fluorene	3.30 3.30 3.30 3.30	2.61 3.39 2.91 2.59	79 103 88 78	42-116 43-129 46-118 43-117
4-Chlorophenyl phenyl ether 4-Nitroaniline 4,6-Dinitro-	3.30 3.30	2.60 4.65	79 141	41-120 0-189
2-methylphenol N-Nitrosodiphenylamine 4-Bromophenyl	6.70 3.30	6.87 2.79	103 85	0-181 9-241
phenyl ether Hexachlorobenzene Pentachlorophenol Phenanthrene Anthracene Di-n-butyl phthalate Fluoranthene Pyrene Butyl benzyl phthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene	3.30 3.30 6.70 3.30 3.30 3.30 3.30 3.30 3.30 3.30	2.69 2.71 6.42 2.49 2.36 2.85 2.47 2.56 3.18 2.59 2.57 2.48	96	52-115 50-131 7-141
bis(2-Ethylhexyl)- phthalate Di-n-octyl phthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	3.30 3.30 3.30 3.30 3.30 3.30 3.30	2.80 2.58 2.85 1.99 2.37 2.54 2.42 2.54	85 78 86 60 72 77 73 77	46-132 47-133

#### ND = Not Detected



## SINGLE CONTROL SAMPLE REPORT Semivolatile Organics by GC/MS

Analyte		Concentration Spiked Measured		
Category: 8270-IRPSL Matrix: SOIL QC Lot: 21 SEP 94-11A QC Run: 21 SE Concentration Units: mg/kg	P 94-11A			
Nitrobenzene-d5 2-Fluorobiphenyl Terphenyl-d14 Phenol-d5 2-Fluorophenol 2,4,6-Tribromophenol	0.33 0.33 0.33 0.67 0.67	0.32 0.33 0.39 0.67 0.67	98 100 118 100 100	38-116 42-120 40-141 32-131 23-184 20-109

#### **METALS**

(Soil/Solid - Total)

Client Name: Gram, Inc. Client ID: 00460001 (3.00,6.00,) Client ID:

077730-0001-SA Lab ID:

Received: 17 SEP 94 Sampled: 12 SEP 94 SOIL Matrix: Analyzed: See Below Prepared: See Below 17 SEP 94 Authorized:

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	11000 ND 5.9 134 ND ND 18300 14.2 5.7 191 27600 27.2 3660 408 ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	52.5 15.8 1.0 10.5 1.1 0.53 105 5.3 5.3 5.3 5.0 105 10.5 15.8 525 0.50 10.5 2.1	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note G: Reporting Limit raised due to matrix interference.

ND = Not detected NA = Not applicable

Approved By: Mei Lai Reported By: Don Carney

## **METALS**



(Soil/Solid - Total)

Client Name: Gram, Inc.

00470001 Client ID:

(3.00, 6.00,)

Lab ID:

077730-0002-SA

SOIL Matrix:

Sampled: 12 SEP 94

17 SEP 94 Authorized:

Prepared: See Below

Received: 17 SEP 94 Analyzed: See Below

Authorized. In St.	•	•				_
Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	11600 ND 7.2 130 ND ND 14300 19.5 7.1 208 30300 20.4 3880 445 ND ND ND 19.3 3210 ND ND ND 19.3	mg/kg mg/kkg mg/kkg mg/kkk mg/kkkk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk	52.8 15.8 0.50 10.6 1.1 0.53 106 5.3 5.3 5.3 10.0 106 2.1 0.10 10.6 15.8 528 1.0 5.3 5.3	6010 6010 7060 6010 6010 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note G: Reporting Limit raised due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai

The cover letter is an integral part of this report. Rev 230787

T-466



(Soil/Solid - Total)

Client Name: Gram, Inc.

Client ID: 00470002 (3.00,6.00,)

Lab ID: 077730-0003-SA

Matrix: SOIL Sampled: 12 SEP 94 Received: 17 SEP 94
Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	8710 ND 5.5 115 ND ND 14500 17.3 6.7 1520 27300 20.5 3280 420 ND ND 17.1 2530 ND ND ND 17.1 2530 ND ND	mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk	52.6 15.8 0.50 10.5 1.1 0.53 105 5.3 5.3 5.3 2.5 105 2.1 0.10 10.5 15.8 526 0.50 10.5 2.1	6010 6010 7060 6010 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R : Raised reporting limit(s) due to high analyte level(s).

Note G : Reporting Limit raised due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

(3.00,6.00,)Client ID: 00490001

077730-0004-SA Lab ID:

Received: 17 SEP 94 Sampled: 12 SEP 94 SOIL Matrix: Analyzed: See Below Prepared: See Below Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	12800 ND 3.7 163 ND 27100 11.5 ND 22.8 12100 25.1 4160 257 ND ND ND ND ND ND ND ND ND ND	mg/kgg/kgg/kgg/kkgg/kkgg/kkgg/kkgg/kkgg	52.8 15.8 0.50 10.6 1.1 0.53 106 5.3 5.3 2.5 106 2.1 0.10 10.6 15.8 528 0.50 10.6 2.1	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

Note q: Post-digestion spike recovery fell between 40% and 85%

due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai

The cover letter is an integral part of this report. Rev 230787

I-468



(Soil/Solid - Total)

Client Name: Gram, Inc.

00760001 Client ID:

(3.00, 6.00,)

Lab ID:

077730-0005-SA

Received: 17 SEP 94

Sampled: 13 SEP 94 Prepared: See Below SOIL Matrix: Analyzed: See Below 17 SEP 94 Authorized:

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	10000 ND 4.0 122 ND ND 35600 9.2 ND 11.3 10500 8.3 3700 214 ND ND ND ND ND ND ND ND ND 11.3 10500 11.3 10500 11.3 10500 11.3 10500 11.3 10500 11.3 10500 11.3 105000 105000 105000 105000 105000 105000 105000 105000 105000 105000 105000 105000 105000 105000 105000 105000 1050000 1050000 105000 105000 105000 105000 1050000 1	mg/kk mg/kk kkk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mgg/kk mg/kk mg/kk	53.0 15.9 0.50 10.6 1.1 0.53 106 5.3 5.3 5.3 1.0 106 2.1 0.10 10.6 15.9 530 1.0 5.3 5.3 5.3 5.3 5.3 5.3 5.3 5.3	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	23 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note 1: Reporting limit raised as a dilution was performed because

the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai

The cover letter is an integral part of this report. Rev 230787

T- 469



(Soil/Solid - Total)

Client Name: Gram, Inc. Client ID: 00090001 (3.00,6.00,)

077730-0006-SA Lab ID:

Received: 17 SEP 94 Sampled: 14 SEP 94 Prepared: See Below Matrix: SOIL Analyzed: See Below Authorized: 17 SEP 94

Parameter		Dry Weight	Reporting	Analytical	Prepared	Analyzed
	Result	Units	Limit	Method	Date	Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	12300 ND 5.2 139 ND ND 32900 11.0 ND 9.0 12000 10.2 4380 266 ND ND ND ND ND 10.2 4380 266 ND ND ND 10.2 4380 266 ND ND ND 10.3 4380 266 ND ND ND ND ND 10.3 243 266 ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kkg mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk mg/kk	54.4 16.3 0.50 10.9 1.1 0.54 109 5.4 5.4 5.4 1.0 109 2.2 0.10 10.9 16.3 544 0.50 544 0.50 10.9 2.2	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	23 SEP 94	28 SEP 94 28 SEP 94

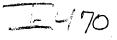
Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

Note R: Raised reporting limit(s) due to high analyte level(s).

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



#### wuanterra Environmental Services

#### **METALS**

(Soil/Solid - Total)

Authorized: 17 SEP 94

Client Name: Gram, Inc. Client ID: 00130001 Client ID:

(6.00, 9.00,)

077730-0007-SA

Lab ID: SOIL Matrix:

Sampled: 14 SEP 94 Prepared: See Below Received: 17 SEP 94 Analyzed: See Below

Parameter Resul	Dry Weight	Reporting	Analytical	Prepared	Analyzed
	t Units	Limit	Method	Date	Date
Aluminum 10500 Antimony ND Arsenic 4. Barium 140 Beryllium ND Cadmium S6500 Chromium 9. Cobalt ND Copper 7. Iron 10900 Lead 7. Magnesium 4030 Manganese 242 Mercury ND Molybdenum ND Nickel ND Potassium 2060 Selenium ND Silver ND Sodium ND Thallium ND Vanadium 19 Zinc 28	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg for mg/kg	54.2 16.3 2.0 10.8 1.1 0.54 108 5.4 5.4 5.4 1.0 108 2.2 0.10 10.8 16.3 542 1.0 5.4 5.4 5.4	6010 6010 7060 6010 6010 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 28 SEP 94 27 SEP 94 28 SEP 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note p: Reporting limit raised due to a dilution necessitated by initial post-digestion spike recovery of less than 40% due to matrix interference.

Note q: Post-digestion spike recovery fell between 40% and 85%

due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

Client ID: 00250001

(0.00, 3.00,)

Lab ID:

077730-0008-SA

Sampled: 14 SEP 94

Received: 17 SEP 94

SOIL Matrix: Analyzed: See Below Prepared: See Below 17 SEP 94 Authorized:

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	12800 ND 5.3 155 ND ND 34100 11.2 5.9 10.0 12400 10.0 4520 265 ND ND ND ND ND ND ND ND ND 19.4 34.9	mg/kk kkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkkk	53.2 15.9 2.0 10.6 1.1 0.53 106 5.3 5.3 5.3 1.0 106 2.1 0.10 10.6 15.9 532 1.0 5.3 5.3	6010 6010 7060 6010 6010 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 29 SEP 94 28 SEP 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note p: Reporting limit raised due to a dilution necessitated by initial post-digestion spike recovery of less than 40% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

(0.00, 3.00,)00350001 Client ID:

077730-0009-SA Lab ID:

Received: 17 SEP 94 Sampled: 14 SEP 94 SOIL Matrix: Analyzed: See Below Prepared: See Below Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	11200 ND 4.1 169 ND ND 34300 10.4 ND 10.0 11500 11.3 4380 272 ND ND ND ND ND ND ND 10.4 ND 10.5 11.5 ND 10.0 11.3 4380 272 ND ND ND ND ND ND ND ND 10.0 11.3 4380 272 ND ND ND ND ND ND ND ND ND ND	mg/kyggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kkggmg/kggmgg/kggmg/kg	52.7 15.8 2.0 10.5 1.1 0.53 105 5.3 5.3 5.3 1.0 105 2.1 0.10 10.5 15.8 527 1.0 5.3 5.3	6010 6010 7060 6010 6010 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 29 SEP 94 28 SEP 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40% and 85% due to matrix interference.

Note R: Raised reporting limit(s) due to high analyte level(s).

Note p: Reporting limit raised due to a dilution necessitated by initial post-digestion spike recovery of less than 40% due to matrix interference.

Note q : Post-digestion spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Approved By: Mei Lai Reported By: Don Carney

(Soil/Solid - Total)

Client Name: Gram, Inc.

01360001 Client ID:

(2.50,6.00,)

Lab ID:

077730-0010-SA

SOIL Matrix: 17 SEP 94 Authorized:

Sampled: 15 SEP 94 Prepared: See Below

Received: 21 SEP 94 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	6760 ND 2.3 99.9 ND ND 30600 6.0 ND 5.3 6660 4.7 2510 109 ND ND ND ND ND ND ND ND ND ND	mg/kkgggggggggggg/kkkggggggggg/kkkkkkkkk	51.9 15.6 2.1 10.4 1.0 0.52 104 5.2 5.2 5.2 5.2 5.2 104 2.1 0.10 10.4 15.6 519 1.0 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2	6010 6010 7060 6010 6010 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 29 SEP 94 28 SEP 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

Note G: Reporting Limit raised due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

Client ID: 01400001 (2.50,6.00,)

Lab ID: 077730-0011-SA

Matrix: SOIL Sampled: 15 SEP 94 Received: 21 SEP 94
Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	8010 ND 4.3 135 ND ND 34900 7.6 ND ND 8010 5.8 2900 143 ND ND ND ND ND ND ND ND ND 14.9 22.1	mg/ky mg/kky mg/kky mg/kky mg/kky mg/kky mg/kky mg/kk mg/kk mg/kk mg/ky mg/ky mg/ky	54.7 16.4 2.2 10.9 1.1 0.55 109 5.5 5.5 5.5 0.55 109 2.2 0.11 10.9 16.4 547 1.1 5.5 547 0.50 10.9 2.2	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7841 6010 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 28 SEP 94

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

Note 1 : Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

Note G : Reporting Limit raised due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc. Client ID: 02150001

077730-0012-SA

(2.50, 5.00,)

SOIL Matrix:

Lab ID: Received: 21 SEP 94 Analyzed: See Below Sampled: 15 SEP 94 Prepared: See Below Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	5280 ND 2.5 117 ND ND 57100 ND ND ND ND 3.3 2080 71.1 ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg mg/kkg	53.2 16.0 2.1 10.6 1.1 0.53 106 5.3 5.3 5.3 0.53 106 2.1 10.6 16.0 532 1.1 5.3 5.3	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	23 SEP 94 23 SEP 94	28 SEP 94 29 SEP 94 28 SEP 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

Note 1: Reporting limit raised as a dilution was performed because the initial post-digest spike recovery fell between 40%

and 85% due to matrix interference.

Note G: Reporting Limit raised due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai



(Soil/Solid - Total)

Client Name: Gram, Inc.

(3.00, 6.00,)02250001 077730-0013-SA Client ID:

Lab ID:

Received: 21 SEP 94 Analyzed: See Below Sampled: 15 SEP 94 Prepared: See Below Matrix: SOIL 17 SEP 94 Authorized:

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Analyze Date Date	ed
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	7500 ND 3.1 95.2 ND ND 21200 8.0 ND 6.1 7710 4.9 2490 136 ND ND ND ND ND ND ND ND ND ND ND ND ND	mg/kggggggggggg/kkggggggggg/kkkkkkkkkkk	52.5 15.8 0.53 10.5 1.1 0.53 105 5.3 5.3 5.3 0.53 105 2.1 0.11 10.5 15.8 525 1.1 5.3 525 0.50 10.5	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7740 6010 7841 6010 6010 6010	23 SEP 94 28 SEP	94 94 94 94 94 94 94 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

Note G : Reporting Limit raised due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Don Carney

Approved By: Mei Lai

The cover letter is an integral part of this report. Rev 230787

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# QC LOT ASSIGNMENT REPORT Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
Sample Number  077730-0001-SA 077730-0001-SA 077730-0001-SA 077730-0001-SA 077730-0001-SA 077730-0002-SA 077730-0002-SA 077730-0002-SA 077730-0002-SA 077730-0002-SA 077730-0003-SA 077730-0003-SA 077730-0003-SA 077730-0003-SA 077730-0004-SA 077730-0004-SA 077730-0004-SA 077730-0004-SA 077730-0004-SA 077730-0004-SA 077730-0005-SA 077730-0005-SA 077730-0005-SA 077730-0005-SA 077730-0005-SA 077730-0005-SA 077730-0005-SA 077730-0005-SA 077730-0005-SA 077730-0006-SA	SOIL SOIL	7471-IRP-S 7421-IRP-S 7060-IRP-S 7740-IRP-S ICP-IRP-S 7841-IRP-S 7060-IRP-S 7740-IRP-S 7740-IRP-S 7740-IRP-S 7740-IRP-S 7740-IRP-S 7740-IRP-S 7741-IRP-S	OCS)  23 SEP 94-BX	
077730-0008-SA 077730-0008-SA 077730-0008-SA 077730-0008-SA	SOIL SOIL SOIL	7471-IRP-S 7421-IRP-S 7060-IRP-S 7740-IRP-S ICP-IRP-S	23 SEP 94-BX 23 SEP 94-BX 23 SEP 94-BX 23 SEP 94-BX 23 SEP 94-BX	23 SEP 94-BX 23 SEP 94-BX 23 SEP 94-BX 23 SEP 94-BX
077730-0008-SA	SOIL	101 - 1101 - 2	LO GET DI DA	



# QC LOT ASSIGNMENT REPORT Metals Analysis and Preparation (cont.)

Laboratory	OC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
Sample Number	QC Haci in	<b>4</b>	•	
077730-0008-SA	SOIL	7841-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0009-SA	SOIL	7471-IRP-S	23 SEP 94-BX	23 SEP 94-BX 23 SEP 94-BX
077730-0009-SA	SOIL	7421-IRP-S	23 SEP 94-BX	
077730-0009-SA	SOIL	7060-IRP-S	23 SEP 94-BX	23 SEP 94-BX 23 SEP 94-BX
077730-0009-SA	SOIL	7740-IRP-S	23 SEP 94-BX	23 SEP 94-BX 23 SEP 94-BX
077730-0009-SA	SOIL	ICP-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0009-SA	SOIL	7841-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0010-SA	SOIL	7471-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0010-SA	SOIL	7421-IRP-S	23 SEP 94-BX 23 SEP 94-BX	23 SEP 94-BX
077730-0010-SA	SOIL	7060-IRP-S		23 SEP 94-BX
077730-0010-SA	SOIL	7740-IRP-S		23 SEP 94-BX
077730-0010-SA	SOIL	ICP-IRP-S	23 SEP 94-BX 23 SEP 94-BX	23 SEP 94-BX
077730-0010-SA	SOIL	7841-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0011-SA	SOIL	7471-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0011-SA	SOIL	7421-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0011-SA	SOIL	7060-IRP-S 7740-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0011-SA	SOIL	ICP-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0011-SA	SOIL	7841-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0011-SA	SOIL	7471-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0012-SA	SOIL	7471-1RP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0012-SA	SOIL	7060-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0012-SA	SOIL	7740-IRP-S	22 SEP 94-BX	23 SEP 94-BX
077730-0012-SA	201F	ICP-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0012-SA	SOIL	7841-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0012-SA	SOIL	7471-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0013-SA	SOIL	7421-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0013-SA	SOIL	7060-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0013-SA	SOIL	7740-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0013-SA	SOIL SOIL	ICP-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0013-SA	SOIL	7841-IRP-S	23 SEP 94-BX	23 SEP 94-BX
077730-0013-SA	JUIL	1041-11/1.2	TO OFF 21 DV	



Analyte		Resi	ult	Units	Reporting Limit
Test: HG-CVAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX	ND	mg/kg	0.10
Mercury			No	3,3	
Test: PB-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX	ND	mg/kg	0.50
Lead			NU	mg/ kg	0.00
Test: AS-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Arsenic	QC Run:	23 SEP 94-BX	ND	mg/kg	0.50
	,				
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX			0.50
Selenium			ND	mg/kg	0.50
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX			
Aluminum Antimony Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum			ND ND ND ND ND ND ND ND ND ND ND ND	mg/kg	50.0 15.0 10.0 1.0 0.50 100 5.0 5.0 5.0 100 2.0 10.0



Analyte		Result	Units	Reporting Limit
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 23 SEP 94-BX Nickel Potassium Silver Sodium Vanadium Zinc	QC Run:	23 SEP 94-BX  ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	15.0 500 5.0 500 10.0 2.0
Test: TL-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Thallium	QC Run:	23 SEP 94-BX ND	mg/kg	0.50
Test: HG-CVAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Mercury	QC Run:	23 SEP 94-BX	mg/kg	0.10
Test: PB-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Lead	QC Run:	23 SEP 94-BX ND	mg/kg	0.50
Test: AS-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Arsenic	QC Run:	23 SEP <b>94</b> -BX	mg/kg	0.50



Analyte		Res	ult	Units	Reporting Limit
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Selenium	QC Run:	23 SEP 94-BX	ND	mg/kg	0.50
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX			
Aluminum Antimony Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum Nickel Potassium Silver Sodium Vanadium Zinc				mg/kg mg/kg mg/kg mg/kg mg/kg mg/kkg	50.0 15.0 10.0 1.0 0.50 100 5.0 5.0 10.0 10
Test: TL-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX			•
Thallium			ND	mg/kg	0,50



Analyte		Result	Units	Reporting Limit
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:			15.0
Nickel Potassium Silver Sodium Vanadium Zinc		ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	15.0 500 5.0 500 10.0 2.0
Test: TL-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Thallium	QC Run:	23 SEP 94-BX ND	mg/kg	0.50
Test: HG-CVAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX ND	mg/kg	0.10
Test: PB-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Lead	QC Run:	23 SEP 94-BX ND	mg/kg	0.50
Test: AS-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Arsenic	QC Run:		mg/kg	0.50

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Analyte		Res	ult	Units	Reporting Limit
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX Selenium	QC Run:	23 SEP 94-BX	ND	mg/kg	0.50
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX		/I	<b>E</b> 0 0
Aluminum Antimony Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum Nickel Potassium Silver Sodium Vanadium Zinc			ND ND ND ND ND ND ND ND ND ND ND ND ND N	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	50.0 15.0 10.0 1.0 0.50 100 5.0 5.0 10.0 15.0 500 5.0 500 10.0
Test: TL-FAA-IRP-S Matrix: SOIL QC Lot: 23 SEP 94-BX	QC Run:	23 SEP 94-BX			
Thallium			ND	mg/kg	0.50



LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

Project: 077730

Category: 7471-IRP-S Mercury by CVAA

STATIC QC LIMITS - DO NOT UPDATE

SOIL Matrix:

QC Run: 23 SEP 94-BX 23 SEP 94-BX OC Lot:

Concentration Units: mg/kg

Accuracy(%) Concentration LCS Limits Spiked Measured **Analyte** 

75-125 35.2 110 32.0 Mercury

Category: 7421-IRP-S Lead, Furnace\_AA

STATÍC QC LIMTS - DO NOT UPDATE

SOIL Matrix:

QC Run: 23 SEP 94-BX 23 SEP 94-BX QC Lot:

Concentration Units: mg/kg

Accuracy(%) Concentration LCS Limits Spiked Measured Analyte 65-135 98 50.9 49.6 Lead

Category: 7060-IRP-S Arsenic, Furnace AA

STATIC QC LIMTS - DO NOT UPDATE

Matrix:

QC Run: 23 SEP 94-BX 23 SEP 94-BX OC Lot:

Concentration Units: mg/kg

Accuracy(%) Concentration Limits LCS Spiked Measured Analyte 121 . 75-125 87.2 72.1 Arsenic

Category: 7740-IRP-S Selenium, Furnace AA STATIC QC LIMITS - DO NOT UPDATE

SOIL Matrix:

23 SEP 94-BX QC Run: 23 SEP 94-BX QC Lot:

Concentration Units: mg/kg

Accuracy(%) Concentration LCS Limits Spiked Measured Analyte 70-130 93 69.2 74.2 Selenium

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.



LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

Project: 077730

(cont.)

Category: ICP-IRP-S ICP Metals

STATIC QC LIMITS - DO NOT UPDATE

SOIL Matrix:

23 SEP 94-BX QC Lot:

QC Run: 23 SEP 94-BX

Concentration Units: mg/kg

Aluminum       3650       3690       101       75-14         Antimony       75.0       68.3       91       50-15         Arsenic       72.1       73.4       102       75-12         Barium       64.8       67.8       105       75-12         Beryllium       26.7       28.8       108       75-12         Calcium       2330       2420       104       75-12         Cadmium       61.6       63.0       102       75-12	Analyte	Concentr Spiked		Accura LCS	cy(%) Limits
Chromium       78.1       81.3       104       75-12         Copper       177       188       106       75-12         Cobalt       177       188       104       75-12         Iren       2550       2650       104       75-12         Magnesium       141       144       102       75-12         Manganese       104       109       105       75-12         Molybdenum       3310       3480       105       75-12         Potassium       50.9       54.1       106       75-12         Nickel       110       119       108       75-12         Selenium       74.2       85.6       109       60-14         Solver       346       333       96       75-12         Sodium       346       333       96       75-12         Thallium       64.1       58.6       91       75-12         Thallium       83.0       84.0       101       75-12	Antimony Arsenic Barium Beryllium Calcium Cadmium Chromium Copper Cobalt Iron Magnesium Manganese Molybdenum Potassium Lead Nickel Selenium Silver Sodium Thallium Vanadium	3650 75.0 72.1 64.8 26.7 2330 61.6 44.1 78.1 177 7360 2550 141 104 3310 50.9 110 74.2 71.7 346 64.1 83.0	3690 68.3 73.4 67.8 24.20 63.0 45.6 81.3 7680 2650 144 109 3480 54.1 80.6 32.6 80.6 81.3 80.6 81.3 80.6 81.3 80.6 81.3 80.6 81.3 80.6 81.3 80.6 81.3 80.6 80.6 80.6 80.6 80.6 80.6 80.6 80.6	91 102 105 108 104 102 103 104 106 104 105 105 109 96 91 101	75-140 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125

Category: 7841-IRF-S Thallium. Furnace AA STATIC QC LIMITS - DO NOT UPDATE

Matrix: SSIL

QC Lot:

23 SEP 94-BX QC Run: 23 SEP 94-BX

Concentration Units: mg/kg

Analyte	Concentration Spiked Measure	Accuracy(%) d LCS Limits
Thallium	64.1 65.	7 103 65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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(Soil/Solid)

Client Name: Gram, Inc. Client ID: 00460001 (3.00,6.00,)

077730-0001-SA Lab ID:

Sampled: 12 SEP 94 Prepared: See Below Received: 17 SEP 94 Matrix: SOIL Analyzed: See Below Authorized: 17 SEP 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.53	9012 Modified	19 SEP 94	20 SEP 94
Nitrate + Nitrite (as N)	2.5	mg/kg	0.26	353.2 Modified	10 OCT 94	10 OCT 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad Approved By: Jennifer Kimzey

> The cover letter is an integral part of this report. Rev 230787

> > 1 - 487



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 00470001

(3.00, 6.00,)

077730-0002-SA Lab ID:

Received: 17 SEP 94 Sampled: 12 SEP 94 Matrix: SOIL Analyzed: See Below Authorized: 17 SEP 94 Prepared: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total Nitrate + Nitrite	ND	mg/kg	0.53	9012 Modified	19 SEP 94	20 SEP 94
(as N)	5.6	mg/kg	0.26	353.2 Modified	10 OCT 94	10 OCT 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Approved By: Jennifer Kimzey Reported By: Hamid Foolad



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 00470002 (3.00, 6.00,)

Lab ID:

077730-0003-SA

Matrix:

SOIL

Sampled: 12 SEP 94

Received: 17 SEP 94

Authorized: 17 SEP 94 Prepared: See Below

Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total Nitrate + Nitrite	ND	mg/kg	0.53	9012 Modified	19 SEP 94	20 SEP 94
(as N)	6.3	mg/kg	0.26	353.2 Modified	10 OCT 94	10 OCT 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad

Approved By: Jennifer Kimzey



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 00490001 (3.00, 6.00,)

077730-0004-SA Lab ID:

Sampled: 12 SEP 94 Received: 17 SEP 94 Matrix: SOIL Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Prepared Analyzed Dry Weight Reporting Analytical Result Units Limit Method Date Date Parameter 19 SEP 94 20 SEP 94 ND mg/kg 0.53 9012 Modified Cyanide, Total Nitrate + Nitrite 10 OCT 94 10 OCT 94 0.26 (as N)2.1 mg/kg 353.2 Modified

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Approved By: Jennifer Kimzey Reported By: Hamid Foolad



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 00760001 (3.00, 6.00,)

Lab ID: 077730-0005-SA

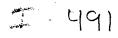
Sampled: 13 SEP 94 Received: 17 SEP 94 Matrix: SOIL 17 SEP 94 Prepared: See Below Analyzed: See Below Authorized:

Prepared Analyzed Dry Weight Reporting Analytical Parameter Result Units Limit Method Date Date 19 SEP 94 20 SEP 94 ND mg/kg 0.53 9012 Modified Cyanide, Total Nitrate + Nitrite 10 OCT 94 10 OCT 94 (as N)3.7 mg/kg 0.26 353.2 Modified

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad Approved By: Jennifer Kimzey





(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 00090001 (3.00,6.00,)

Lab ID: 077730-0006-SA

Matrix: SOIL Sampled: 14 SEP 94 Received: 17 SEP 94 Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Dry Weight Reporting Analytical Prepared Analyzed Limit Parameter Result Units Date Method Date Cyanide, Total Nitrate + Nitrite ND 0.54 9012 Modified 19 SEP 94 20 SEP 94 mg/kg (as N) 3.7 0.27 353.2 Modified 10 OCT 94 10 OCT 94 mg/kg

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad

Approved By: Jennifer Kimzey



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 00130001 (6.00, 9.00,)

Lab ID: 077730-0007-SA

Matrix: SOIL Sampled: 14 SEP 94 Received: 17 SEP 94 17 SEP 94 Authorized: Prepared: See Below Analyzed: See Below

Dry Weight Reporting Analytical Prepared Analyzed Parameter Result Units Limit Date Method Date ND 0.54 9012 Modified 19 SEP 94 20 SEP 94 Cyanide, Total mg/kg Nitrate + Nitrite (as N)4.8 mg/kg 0.27 353.2 Modified 10 OCT 94 10 OCT 94

Percent Moisture is 8%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad

Approved By: Jennifer Kimzey



(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 00250001 (0.00,3.00,)

Lab ID: 077730-0008-SA

Matrix: SOIL Sampled: 14 SEP 94 Received: 17 SEP 94
Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Dry Weight Reporting Analytical Prepared Analyzed Parameter Result Units Limit Method Date Date 19 SEP 94 20 SEP 94 ND mg/kg 0.53 9012 Modified Cyanide, Total Nitrate + Nitrite (as N)1.0 mg/kg 0.27 353.2 Modified 10 OCT 94 10 OCT 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad Approved By: Jennifer Kimzey



(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 00350001 (0.00,3.00,)

Lab ID: 077730-0009-SA

Matrix: SOIL Sampled: 14 SEP 94 Received: 17 SEP 94 Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Dry Weight Reporting Analytical Prepared Analyzed Parameter Result Units Limit Method Date Date Cyanide, Total Nitrate + Nitrite ND 0.53 9012 Modified 19 SEP 94 20 SEP 94 mg/kg (as N) 4.9 mg/kg 0.26 353.2 Modified 10 OCT 94 10 OCT 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad Approved By: Jennifer Kimzey

The cover letter is an integral part of this report.

Rev 230787

1. 495



(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 01360001 (2.50,6.00,)

Lab ID: 077730-0010-SA

Matrix: SOIL Sampled: 15 SEP 94 Received: 21 SEP 94 Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total Nitrate + Nitrite	ND	mg/kg	0.52	9012 Modified	23 SEP 94	29 SEP 94
(as N)	1.4	mg/kg	0.26	353.2 Modified	10 OCT 94	10 OCT 94

Percent Moisture is 4%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad

Approved By: Jennifer Kimzey



(Soil/Solid)

Client Name: Gram, Inc.

Client ID: 02150001 (2.50,5.00,)

Lab ID: 077730-0012-SA

Matrix: SOIL Sampled: 15 SEP 94 Received: 21 SEP 94 Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Dry Weight Reporting Prepared Analyzed Analytical Result Units Date Date Parameter Limit Method 0.53 23 SEP 94 29 SEP 94 Cyanide, Total ND mq/kq 9012 Modified Nitrate + Nitrite (as N) 1.0 mg/kg 0.27 353.2 Modified 10 OCT 94 10 OCT 94

Percent Moisture is 6%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad Approved By: Jennifer Kimzey



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 01400001 (2.50, 6.00,)

Lab ID: 077730-0011-SA

Sampled: 15 SEP 94 Prepared: See Below Received: 21 SEP 94 Matrix: SOIL Authorized: 17 SEP 94 Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Cyanide, Total	ND	mg/kg	0.55	9012 Modified	23 SEP 94	29 SEP 94
Nitrate + Nitrite (as N)	4.0	mg/kg	0.27	353.2 Modified	10 OCT 94	10 OCT 94

Percent Moisture is 9%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad Approved By: Jennifer Kimzey



(Soil/Solid)

Client Name: Gram, Inc. Client ID: 02250001 (3.00, 6.00,)

077730-0013-SA Lab ID:

Matrix: SOIL Sampled: 15 SEP 94 Received: 21 SEP 94 Authorized: 17 SEP 94 Prepared: See Below Analyzed: See Below

Dry Weight Reporting Analytical Prepared Analyzed Parameter Result Units Limit Method Date Date Cyanide, Total ND mg/kg 0.53 9012 Modified 23 SEP 94 29 SEP 94 Nitrate + Nitrite (as N)0.58 mg/kg 0.26 353.2 Modified 10 OCT 94 10 OCT 94

Percent Moisture is 5%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Hamid Foolad Approved By: Jennifer Kimzey



# QC LOT ASSIGNMENT REPORT Wet Chemistry Analysis and Preparation

077730-0001-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0001-SA         SOIL         CN-IRP-S         19 SEP 94-A         19 SEP 94-A           077730-0002-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0003-SA         SOIL         CN-IRP-S         19 SEP 94-A         19 SEP 94-A           077730-0003-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0003-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0004-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0005-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0005-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0005-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0005-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0005-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A           077730-0005-SA         SOIL         NO3&NO2-S         10 OCT 94-A         10 OCT 94-A	Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
11//30-0013-5A 501L CN-1RY-3 25 5EF 54-A 25 5EF 54-A	077730-0001-SA 077730-0002-SA 077730-0002-SA 077730-0003-SA 077730-0004-SA 077730-0005-SA 077730-0005-SA 077730-0006-SA 077730-0006-SA 077730-0007-SA 077730-0007-SA 077730-0008-SA 077730-0008-SA 077730-0009-SA 077730-0010-SA 077730-0011-SA 077730-0011-SA 077730-0012-SA 077730-0012-SA	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	CN-IRP-S N03&N02-S CN-IRP-S	19 SEP 94-A 10 OCT 94-A 19 SEP 94-A 10 OCT 94-A 19 SEP 94-A 10 OCT 94-A 23 SEP 94-A 23 SEP 94-A 23 SEP 94-A	19 SEP 94-A 10 OCT 94-A 19 SEP 94-A 10 OCT 94-A 23 SEP 94-A 23 SEP 94-A 23 SEP 94-A 23 SEP 94-A



# METHOD BLANK REPORT Wet Chemistry Analysis and Preparation

Analyte	Result	Units	Reporting Limit
Test: NO3&NO2-S Matrix: SOIL QC Lot: 10 OCT 94-A QC Run: Nitrate + Nitrite (as N)	10 OCT 94-A	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 19 SEP 94-A QC Run: Cyanide, Total	19 SEP 94-A ND	mg/kg	0.50
Test: NO3&NO2-S Matrix: SOIL QC Lot: 10 OCT 94-A QC Run: Nitrate + Nitrite (as N)	10 OCT 94-A	mg/kg	0.25
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 19 SEP 94-A QC Run: Cyanide, Total	19 SEP 94-A ND	mg/kg	0.50
Test: CN-9012-IRP-KAFB-S Matrix: SOIL QC Lot: 23 SEP 94-A QC Run: Cyanide, Total	23. SEP 94-A ND	mg/kg	0.50



LABORATORY CONTROL SAMPLE REPORT

Wet Chemistry Analysis and Preparation

Project: 077730

Category: NO3&NO2-S Nitrate plus nitrite for soil/solid/waste matrices.

Matrix: SOIL

QC Lot: 10 OCT 94-A QC Run: 10 OCT 94-A

Concentration Units: mg/kg

Analyte Concentration Accuracy(%)
Spiked Measured LCS Limits

Nitrate + Nitrite (as N) 2.50 2.62 105 75-125

Category: CN-IRP-S Cyanide

Matrix: SOIL

QC Lot: 19 SEP 94-A QC Run: 19 SEP 94-A

Concentration Units: mg/kg

Concentration Accuracy(%)
Spiked Measured LCS Limits

Cyanide, Total 5.00 4.90 98 77-115

Category: CN-IRP-S Cyanide

Matrix: SOIL

QC Lot: 23 SEP 94-A QC Run: 23 SEP 94-A

Concentration Units: mg/kg

Concentration Accuracy(%)
Spiked Measured LCS Limits

Cyanide, Total 5.00 4.85 97 77-115

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

I 502



Quanterra Incorporated 880 Riverside Parkway West Sacramento, California 95605

916 373-5600 Telephone 916 372-1059 Fax

October 31, 1994

QUANTERRA PROJECT NUMBER: 078162

PO/CONTRACT: 006

Jeff Johnson Gram, Inc. 8500 Menaul Blvd. NE, #B-370 Albuquerque, New Mexico 87112

Dear Mr. Johnson:

This report contains the analytical results for the two soil samples which were received under chain of custody by Quanterra West Sacramento on 13 October 1994. These samples are associated with your Kirtland AFB Project.

The case narrative is an integral part of this report.

Preliminary results were sent via facsimile on 19 and 31 October 1994.

If you have any questions, please call me at (916) 374-4362.

Sincerely,

Diana L. Brooks Project Manager

DLB/rhs

Enclosures



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### **QUANTERRA PROJECT NUMBER 078162**

Case Narrative

Quanterra's Quality Assurance Program

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Chain of Custody Documentation

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Includes Samples: 1 through 2

Sample Data Sheets Method Blank Report

Laboratory Control Sample Report (LCS)

General Inorganics - Method 353.2

Includes Samples: 1 through 2

Sample Data Sheets Method Blank Report

Laboratory Control Sample Report (LCS)



### **CASE NARRATIVE**

### **QUANTERRA PROJECT NUMBER 078162**

### **General Comments**

A temperature blank was not associated with this batch of samples. The ambient cooler temperature was recorded as 4.0 deg C.

There were no anomalies associated with this report.

- 505



### QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documentable quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

### **Laboratory Control Samples - (LCS)**

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

Single Control Samples. An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.



### SAMPLE DESCRIPTION INFORMATION for Gram, Inc.

Lab ID	Client ID		Matrix	Sampl Date	ed Time	Received Date
078162-0001-SA 078162-0002-SA		(1.50,2.00,) (2.00,3.50,)	SOIL SOIL			13 OCT 94 13 OCT 94

			NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK	PERATURE FROM T	EMPERATURE	3LANK	
PROJECT NAME:	McCORMICK RANCH	# OF CONTAINERS •	7 - 7	20, 24 15 15	٧		
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS	- - - )				
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282	CONTAINER VOLUME	ફ લા/				
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	7.6				
LABORATORY CONTACT:		ANALYSES REQUESTED	1 2	3 4	s	•	-
SAMPLE IDENTIFICATION		DATE/TIME					
(SITE ID, LOCATION ID, SAMPLE ID)	LE (D)	MATRIX COLLECTED					
KRTLD154	1000	410 MAY 6	\ \ -	7	/	7	
KRTLD154 - 1 C	1	clot 1/2/1	\ \ -	Ì	\	1	
KRTLD154 -		1					
KRTLD154 -	,						
KRTLD154 -							
KRTLD154 -							
KRTLD154 -	_						
KRTLD154 -							
KRTLD154 -							
KRTLD154-							
KRTLD154 -							
W) MATRIX:	CONTAINER TYPES:	LABORATORY ANALYSES:			]-	   	
	P-POLYETHYLENE	1. EXPLOSIVES (SW8330, SW	EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)		Samo les	Samples recibin	200
W.WATER	CO - CLEAR OLASS	2. NITRATE + NITRITE (E353.2)	(21)			10.4:00	
0-OTHER	- AG-AMBER GLASS	3. SEMI-VOCs (SW8270)				2	5 10/11/41
*NOTE: FOR SOIL SAMPLES OF	•NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT	4. ICP METALS (SW6010); M	ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY	, AND MERCURY	•		124/51
4 C IS REQUIRED TO PROVIDE	4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL				Arbie	at temp	6.0
ANALYSES, THE RECOURED AN	ANALTSES. THE RECOURED ANALTSES FOR EACH SOIL SAMPLE  ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1.7)	6. LEAD (SW /421), AKSENIC 7. CYANIDE (SW9012)	LEAD (SW /411), AKSENIC (SW /000), SELENIUM (SW 7740) CYANIDE (SW 9012)			M3/81/19	18/81
	RELINQUISHED BY:	RECEIVED BY:	ED BY:		<del></del>		
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE	<u>a</u>	DATE	TIME	
· 11:117	The state of the s	1011 (AKAM)	1201 100		11/1-11/01	11.51	
				·			
REL	RELEASED TO SHIPPER BY:		RECEIVED BY SHIPPER.				
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE	BILLO	BILL OF LADING #	DATE	TIME
RELEASED T	RELEASED TO LABORATORY BY (SHIPPER):	R	RECEIVED BY LABORATORY:				
COMPANY NAME	SIGNATURE	COMPANY NAME	SIGNATURE	E	DATE	TIME	
		Quentecca			10/13/94	0100	
				2			

### **wuanterra** Environmental Services

### **METALS**

(Soil/Solid - Total)

Client Name: Gram, Inc. Client ID: 03110001 (1.50, 2.00,)

078162-0001-SA Lab ID:

Received: 13 OCT 94 Sampled: 12 OCT 94 SOIL Matrix: Analyzed: See Below Prepared: See Below Authorized: 13 OCT 94

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	7940 ND 2.2 127 ND ND 53100 8.5 ND 5.6 8210 4.0 3310 116 ND ND ND ND ND ND ND ND ND ND	mg/kg mg/kkg mg/kkg mg/kkg mg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kkg mgg/kg mgg/kg	52.6 15.8 0.53 10.5 1.1 0.53 105 5.3 5.3 5.3 0.53 105 2.1 0.11 10.5 15.8 526 0.53 5.3 5.3 5.3 5.3 5.3 5.3 5.3	6010 6010 7060 6010 6010 6010 6010 6010	13 OCT 94	14 OCT 94

Percent Moisture is 4.9%. All results and limits are reported on a dry weight basis.

Note q : Post-digestion spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Approved By: Mei Lai Reported By: Keith Varvell

> The cover letter is an integral part of this report. Rev 230787



### **METALS**

(Soil/Solid - Total)

Client Name: Gram, Inc.

Client ID: 03120001 (2.00,3.50,)

Lab ID: 078162-0002-SA

Matrix: SOIL Sampled: 12 OCT 94 Received: 13 OCT 94
Authorized: 13 OCT 94 Prepared: See Below Analyzed: See Below

Parameter	Result	Dry Weight Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Molybdenum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	6120 ND 2.2 128 ND ND 58100 6.0 ND ND 6230 2.9 2730 71.8 ND ND ND ND ND ND ND 14.7 13.6	mg/kkg mg/kkg mg/kkkg mg/kkkg mg/kkk mg/kkk mg/kkk mg/kkk mg/kkk mg/kk mg/kk	52.9 15.9 0.53 10.6 1.1 0.53 106 5.3 5.3 0.53 106 2.1 0.11 10.6 15.9 529 0.53 5.3 5.3 0.53	6010 6010 7060 6010 6010 6010 6010 6010 6010 7421 6010 6010 7471 6010 6010 7471 6010 6010 7740 6010 7740 6010 6010 7841 6010 6010	13 OCT 94	

Percent Moisture is 5.4%. All results and limits are reported on a dry weight basis.

Note q: Post-digestion spike recovery fell between 40% and 85% due to matrix interference.

ND = Not detected NA = Not applicable

Reported By: Keith Varvell

Approved By: Mei Lai

The cover letter is an integral part of this report.

Rev 230787



### QC LOT ASSIGNMENT REPORT Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	(SCS/BLANK)
078162-0001-SA 078162-0001-SA 078162-0001-SA 078162-0001-SA 078162-0001-SA 078162-0001-SA 078162-0002-SA 078162-0002-SA 078162-0002-SA 078162-0002-SA 078162-0002-SA	SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL	7471-IRP-S 7421-IRP-S 7060-IRP-S 7740-IRP-S ICP-IRP-S 7841-IRP-S 7471-IRP-S 7060-IRP-S 7740-IRP-S ICP-IRP-S	13 OCT 94-T 13 OCT 94-B 13 OCT 94-B 13 OCT 94-BX 13 OCT 94-B 13 OCT 94-BX 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B	13 OCT 94-T 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-T 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B 13 OCT 94-B



METHOD BLANK REPORT Metals Analysis and Preparation (cont.)

Analyte		Resi	ult	Units	Reporting Limit
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 13 OCT 94-B Nickel Potassium Silver Sodium Vanadium Zinc	QC Run:	13 OCT 94-B	ND ND ND ND ND ND	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	15.0 500 5.0 500 10.0 2.0
Test: TL-FAA-IRP-S Matrix: SOIL QC Lot: 13 OCT 94-BX Thallium	QC Run:	13 OCT 94-BX	ND	mg/kg	0.50



### METHOD BLANK REPORT Metals Analysis and Preparation

Analyte		Result	Units	Reporting Limit
Test: HG-CVAA-IRP-S Matrix: SOIL QC Lot: 13 OCT 94-T Mercury	QC Run:	13 OCT 94-T ND	mg/kg	0.10
Test: PB-FAA-IRP-S Matrix: SOIL QC Lot: 13 OCT 94-B Lead	QC Run:	13 OCT 94-B ND	mg/kg	0.50
Test: AS-FAA-IRP-S Matrix: SOIL QC Lot: 13 OCT 94-B Arsenic	QC Run:	13 OCT 94-B .ND	mg/kg	0.50
Test: SE-FAA-IRP-S Matrix: SOIL QC Lot: 13 OCT 94-BX Selenium	QC Run:	13 OCT 94-BX ND	mg/kg	0.50
Test: ICP-IRPMS-S Matrix: SOIL QC Lot: 13 OCT 94-B	QC Run:	13 OCT 94-B	0.	F0. 0
Aluminum Antimony Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum		ND ND ND ND ND ND ND ND ND	mg/kg	50.0 15.0 10.0 1.0 0.50 100 5.0 5.0 5.0 100 2.0



LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

Project: 078162

(cont.)

Category: ICP-IRP-S ICP Metals

STATIC QC LIMITS - DO NOT UPDATE

SOIL Matrix:

13 OCT 94-B

QC Run: 13 OCT 94-B

QC Lot: Concentration Units: mg/kg

	Concentr Spiked	ation Measured	Accur LCS	acy(%) Limits
Analyte	Spiked	neusur eu		
Analyte  Aluminum Antimony Arsenic Barium Beryllium Calcium Cadmium Chromium Copper Cobalt Iron Magnesium Manganese Molybdenum Potassium Lead Nickel Selenium Silver Sodium	3650 75.0 72.1 64.8 26.7 2330 61.6 44.1 78.1 177 7360 2550 141 104 3310 50.9 110 74.2 71.7 346	4120 69.9 80.2 70.5 31.6 2530 64.5 48.7 83.3 202 8880 2690 156 112 3360 53.5 123 80.4 72.7 363	113 93 111 109 118 108 105 110 107 114 121 106 110 108 101 105 112 108 101 105	75-140 50-150 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125 75-125
Thallium	64.1 83.0	69.8 89.2	109 107	75-125 75-125
Vanadium Zinc	78.2	81.4	104	75-125

Category: 7841-IRP-S Thallium, Furnace AA STATIC QC LIMITS - DO NOT UPDATE

Matrix: SOIL

13 OCT 94-BX QC Lot:

QC Run: 13 OCT 94-BX

Concentration Units: mg/kg

	Concent	ration		acy(%)
Analyte	Spiked	Measured	LCS	Limits
Thallium	64.1	74.0	115	65-135

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.



LABORATORY CONTROL SAMPLE REPORT Metals Analysis and Preparation

Project: 078162

Category: 7471-IRP-S Mercury by CVAA

STATIC QC LIMITS - DO NOT UPDATE

SOIL Matrix:

13 OCT 94-T OC Lot:

QC Run: 13 OCT 94-T

Concentration Units: mg/kg

Accuracy (%) Concentration Limits LCS Spiked Measured Analyte 93 75-125 29.6 32.0

Mercury

Category: 7421-IRP-S Lead, Furnace AA STATIC QC LIMTS - DO NOT UPDATE

Matrix:

SOIL

13 OCT 94-B

QC Run: 13 OCT 94-B

QC Lot: Concentration Units: mg/kg

Accuracy(%) Concentration Limits LCS Spiked Measured Analyte 95 65-135 48.4 50.9 Lead

Category: 7060-IRP-S Arsenic, Furnace AA

STATIC QC LIMTS - DO NOT UPDATE

Matrix: SOIL

13 OCT 94-B OC Lot:

QC Run: 13 OCT 94-B

Concentration Units: mg/kg

Accuracy(%) Concentration LCS Limits Spiked Measured Analyte 90.2 125 75-125 72.1 Arsenic

Category: 7740-IRP-S Selenium, Furnace AA

STATIC QC LIMITS - DO NOT UPDATE

Matrix:

SOIL

13 OCT 94-BX

QC Run: 13 OCT 94-BX

QC Lot: Concentration Units: mg/kg

Concentration Accuracy(%) LCS Limits Spiked Measured Analyte 70-130 85.0 115 74.2 Selenium

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.



### GENERAL INORGANICS

(Soil/Solid)

Client Name: Gram, Inc.

03110001 Client ID:

(1.50, 2.00,)078162-0001-SA

Lab ID: Matrix: Authorized: 13 OCT 94

SOIL

Received: 13 OCT 94 Sampled: 12 OCT 94 Prepared: See Below

Analyzed: See Below

Dry Weight Reporting Analytical Prepared Analyzed Limit Method Date Date Result Units Parameter

Nitrate + Nitrite

(as N)

0.79 mg/kg 0.26

353.2 Modified 27 OCT 94 27 OCT 94

Percent Moisture is 4.9%. All results and limits are reported on a dry weight basis.

ND = Not detected NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Jennifer Kimzey

The cover letter is an integral part of this report. Rev 230787



QC LOT ASSIGNMENT REPORT Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
078162-0001-SA	SOIL	NO3&NO2-S	27 OCT 94-A	27 OCT 94-A
078162-0002-SA	SOIL	NO3&NO2-S	27 OCT 94-A	27 OCT 94-A



LABORATORY CONTROL SAMPLE REPORT Wet Chemistry Analysis and Preparation

Project: 078162

Category: NO3&NO2-S Nitrate plus nitrite for soil/solid/waste matrices. Matrix: SOIL QC Lot: 27 OCT 94-A QC Run: 27 OCT 94-A

Concentration Units: mg/kg

Analyte	Concent Spiked	ration Measured		Accuracy(%) LCS Limits
Nitrate + Nitrite (as N)	2.50	2.53	-	101 75-125

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

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			1	<b>,</b>			1	/						·										TIME	1131	1136		E V	DAIE		-	TIME
1 10-01 br D. Smale lycelyn				5			7	\																DATE	10/13/11	17/1/2 1-6		7 0100	BILL OF LADING #			DATE
lucativ				-			7	\													JERCURY					152						
XM91e	-			-									•					23		!	4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY 5. MERCURY (SW7471)	7740)		SIGNATURE	1	14.01.11	ngo.	rek:			,;	SIGNATURE
-0 -0 -3	l			7			>	\		,								SW8330-ADD-			rsenic, sele	LENIUM (SW7		SIGN	1	4 5	1119 /10 4411	RECEIVED BY SHIFFER.	SIGNATURE		RECEIVED BY LABORATORY:	SIGN
16-0	S)	1632	7,7	-	•						·	•						8330-ADD-1. S	.2)		NUS LEAD, A	(SW7060), SE	ED BY:		10	2	1004	SECE.		1 1/21	CEIVED BY 1	
П	TAINERS	VOLUME	<b>LTIVE</b>	QUESTED	DATE/TIME	3	14 0945	14 /0/0										LABORATORY ANALYSES: FXPI OSTVFS (SW8130-ADD-1, SW8130-ADD-2)	2. NITRATE + NITRITE (E353.2)	(W8270)	(SW6010); MI W7471)	LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740)	RECEIVED BY	' NAME	しいり	1110.			r name		RE	1
# OF CONTAINERS •	TYPE OF CONTAINERS	CONTAINER VOLUME	PRESERVATIVE	ANALYSES REQUESTED	VQ Algaryy	1	1 : 1/1/14	11/11/4										LABORATORY ANALYSES:	TTRATE + N	SEMI-VOCs (SW8270)	ICP METALS (SW601 MERCURY (SW7471)	EAD (SW742	CI ANIDE (SW3012)	COMPANY NAME	MAJ4/	Gram			COMPANY NAME	11162		COMPANY NAME
*	Ţ	٥		Vγ	•	\$ 1°	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\						<u>.                                    </u>					LAB	: ~i	3.8	4. ∾. ∺ >	(					-	-		in in	$\vdash$	
McCORMICK RANCH	PHILLIPS LABORATORY, KIRTLAND AFB	JEFF JOHNSON (GRAM) 505-299-1282	STEVE GORIN (LATA) 505-880-3439	•	141 0			- CO										CONTAINER TYPES:	G.CLEAR GLASS	AGAAMBER GLASS	NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT	NALYSES, THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE	REIDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1:1).  REINOUISHED BY:	SIGNATURE	11 x 11 2m	16H 35h1150		RELEASED TO SHIPPER BY:	SIGNATURE	1 xx Kin x Mother	DEI FASED TO I ABORATORY BY (SHIPPER):	SIGNATURE
PROJECT NAME:	CLIENT:	PRIMARY CONTACT:	SECONDARY CONTACT:	LABORATORY CONTACT:	SAMPLE IDENTIFICATION	ATION ID, SAMPL	RTLD154 - 0 3 1 1 - 1 -	RTLD154 - 3 3 1 6	RTLD154	RTLD154	RTLD154	RTLD154 -	RTLD154-		RTLD154	RTLD154-	RTLD154.	<u>IATRIX;</u>	· SUIL	OTHER	VOTE: FOR SOIL SAMPLES ONI	NALYSES. THE REQUIRED AN.	RE IDENTIFIED BY CHECKING	COMPANY NAME	LATA	いてなかし		RELE	COMPANY NAME	יייען אאטוין	OT CLASED TO	COMPANY NAME

45/62/5 DATE TIME TIME 3 VOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK 4915218 DATE Sample location DATE BILL OF LADING # 42S9H989L, 4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY ام لهدر SIGNATURE SIGNATURE RECEIVED BY SHIPPER: 6. LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) <u>ئ</u> دولا SIGNATURE RECEIVED BY LABORATORY: 22018 स्वप्र 202 7 RECEIVED BY: 2. NITRATE + NITRITE (E353.2) 1020 9 hzhr 1207 3/21/44 0915 9/25/94 0870 8/25/94/ 0820 5/24/1/235 7 Proley 1340 8/26/64 1100 COLO 16/92/3 121 4513 8/25/64 1207 LABORATORY ANALYSES: ANALYSES REQUESTED TYPE OF CONTAINERS CONTAINER VOLUME COLLECTED DATE/TIME # OF CONTAINERS • COMPANY NAME COMPANY NAME COMPANY NAME PRESERVATIVE 3. SEMI-VOCs (SW8270) MERCURY (SW7471) CYANIDE (SW9012) \$ 125 194 LATA MATRIX PHILLIPS LABORATORY, KIRTLAND AFB 4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL **EFF JOHNSON (GRAM) 505-299-1282** \*NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT STEVE GORIN (LATA) 505-880-3439 ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1 - 7) MS/MSD SIGNATURE SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): RELEASED TO SHIPPER BY: CONTAINER TYPES: McCORMICK RANCH P - POLYETHYLENE CG - CLEAR GLASS RELINQUISHED BY: 0 0 Q 0 0 a d 0 0 0 d 0 0 (SITE ID, LOCATION ID, SAMPLE ID) 9 9 0 0 Q SAMPLE IDENTIFICATION LABORATORY CONTACT: SECONDARY CONTACT: PRIMARY CONTACT:  $\boldsymbol{\omega}$ COMPANY NAME COMPANY NAME COMPANY NAME PROJECT NAME: 0 CLIENT  $\mathcal{O}$  $\circ$ C KRTLD154-KRTLD154 KRTLD154 KRTLD154 KRTLD154-KRTLD154. KRTLD154-KRTLD154-KRTLD154 -KRTLD154. KRTLD154 W-WATER D. OTHER MATRIX S-SOIL. オトヤ

			NOTE: MEA	EE.	TEMPERAT	RE FROM TE	MPERATURE	BLANK	
PROJECT NAME:	McCORMICK RANCH	# OF CONTAINERS •	1/00	75	Jer Sumple	ole lucatio	4io~		
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS	6655	,					
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282	CONTAINER VOLUME	1603						-
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	$4^{o}c$						
LABORATORY CONTACT:		ANALYSES REQUESTED	1	1	3	4	8	. 9	7
SAMPLE IDENTIFICATION	, and a	DATE/TIME						-	
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-IATRIX:	CONTAINER TYPES:	LABORATORY ANALYSES:							,
· SOIL•	P - POLYETHYLENE	1. EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)	V8330-ADD-1, S	:W8330-ADD-2	_				
V. WATER	CG - CLEAR GLASS	2. NITRATE + NITRITE (E353.2)	3.2)					•	
NOTHER FOR SOIL SALES ON	OTHER AGE COIL CAME TE COME AS AGE 14 DE COIL AT	3. SEMI-VOCs (SW8270) 4. 100 MFT ALS SEMICAL MEDIUS LEAD ABSENIC SELENITAL AND MEDIUM	TA CLASS AS	OCENIIC CEI EX	M CHAN MID	701702			
C IS REQUIRED TO PROVIDE S	OUTE: FOR SOIL SAMFLES ONLY ONE 18-52 ULASS JAK OF SOIL AT CITE REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL	4. ICF METALS (SW0010), NI 5. MERCURY (SW7471)	INUS LEAD, A	RAEINIC, AELEI	אוטוא, אטוט או	ERCORI			
WALYSES. THE REQUIRED AN	MALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE	6. LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740)	S (SW7060), SEI	LENIUM (SW77	740)				
RE IDENTIFIED BY CHECKING	RE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (L-1)	7. CYANIDE (SW9012)							
R	RELINQUISHED BY:	RECEIV	RECEIVED BY:						
COMPANY NAME	SIGNĄTURE	COMPANY NAME		SIGNATURE	TURE		DATE	TIME	
JUN ING	Thurst Mother	(ARAM) INC	788×	104	(25)		1.45/6	1435	
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RELE	RELEASED TO SHIPPER BY:		RECEI	RECEIVED BY SHIPPER:	ER:		·		
COMPANY NAME	SIGNATURE	COMPANY NAME		SIGNATURE		BILL OF 1	BILL OF LADING #	DATE	TIME
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RELEASED TC	RELEASED TO LABORATORY BY (SHIPPER):	R	RECEIVED BY LABORATORY:	ABORATORY:					
COMPANY NAME	SIGNATURE	COMPANY NAME		SIGNATURE	TURE		DATE	TIME	
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# CHAIN OF CUSTODY NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

			NOTE: MEA	URE COOL	TEMPERAIL	KE FROM 1E	MFEKATUKE	-	
PROJECT NAME:	McCORMICK RANCH	# OF CONTAINERS •	EU-9/	ত ১৩	FM25 12	ह्मणा प्र	dai		
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS	s (class	, ,					
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282	CONTAINER VOLUME		٠ ٧					
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	704						
LABORATORY CONTACT:		ANALYSES REQUESTED	1	7	•	-	S	•	-
SAMPLE IDENTIFICATION	•	DATE/TIME						•	
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MATRIX:	CONTAINER TYPES:	LABORATORY ANALYSES:	ES:						•
S-SOIL*	P - POLYETHYLENE		SW8330-ADD-1,	SW8330-ADD-2	<u>.</u>				
W-WATER	CG - CLEAR GLASS		:353.2)						
O-OTHER	AG . AMBER GLASS		CAN TO THE A P.	A DEENIL OFF E	MIRA AND	VEPCIEV			
•NOTE: FOR SOIL SAMPLES C	NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT	4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELEMIUM, AND MERCURI	; MINOS LEAD, A	AKSENIC, SELE	MICINI, AND IN	MERCONI			
4 C IS REQUIRED TO PROVIDE ANALYSES. THE REQUIRED A	4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE		.NIC (SW7060), S	ELENIUM (SW7	740)				
ARE IDENTIFIED BY CHECKIN	ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1-7)	7. CYANIDE (SW9012)					_		
	RELINQUISHED BY:	REC	RECEIVED BY:						
COMPANY NAME	SIGNATURE			SIGN	SIGNATURE		DATE		
From, INC.	Whinds. I Nother	(TRAMITOR	NEW TOWN	Sinher	Sp.		13/6/6	14.55	·.
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RE	RELEASED TO SHIPPER BY:		REC	RECEIVED BY SHIPPER:	PER:				1
COMPANY NAME	SIGNATURE	COMPANY NAME		SIGNATURE		BILLOF	BILL OF LADING #	DATE	I IME
GASAM, SNC	Last Johnsa	70.07	EV VIII	with				7 6	( ) ( )
			`	, ,			r		
RELEASED	RELEASED TO LABORATORY BY (SHIPPER):		RECEIVED BY	RECEIVED BY LABORATORY:			1	27/11	
I COMPANY NAME	SIGNATURE	COMPANY NAME		NDIS	SIGNATURE		DAIE	LIME	
									7

CHAIN OF CUSTODY

NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

MOST RE-SAMPLE

COMPANY NAME   RECEIVED   COMPANY NAME   COMPANY NAME   RECEIVED   COMPAN	McCORMICK RANCH	# OF CONTAINERS •		RATURE FROM TE	SMPERATURE	BLANK	
ANALYSES REQUESTED   1   2   3   4   5   6	IORY, KIR I LAND AFB (AM) 505-299-1282	CONTAINER VOLUME	9/60r				
AMALYSES REQUESTED   1   2   3   4   5   6	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	4°C				
MATRIX   COLLECTED		ANALYSES REQUESTED	2	4	5	•	-
S   9/1/14   1/2 O   1/2   1							
COMPANY NAME   COMP					1	Ĭ	]
LARORATORY ANALYSES:   LARORATORY ANALYSES:   EXPLOSIVES (SW8370, SW8330-ADD-2)   SMITACE (SW8270)   A. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   S. MERCURY (SW7401)   C. CAMIDE (SW9012)   C. CAMIDANY NAME   SIGNATURE   DATE   TIME		47/45		/	7	)	1
LABORATORY ANALYSES:   E. EXPLOSIVES (5W8330, 5W8330-ADD-1, 5W8330-ADD-2)   STAIL-VOCA (5W8270)   A. ICP METALTS (5W6010), MITUS LEAD, ARSENIC, SELENIUM, AND MERCURY   S. MERCURY (5W7471), ASSENIC (5W7060), SELENIUM (5W740)   C. CYANIDE (5W9012)   C. CYANIDE (5W9012)   C. COMPANY NAME   SIGNATURE   BILL OF LADING # DATE     C. COMPANY NAME   SIGNATURE   BILL OF LADING # DATE     C. COMPANY NAME   SIGNATURE   BILL OF LADING # DATE     C. COMPANY NAME   SIGNATURE   BILL OF LADING # DATE     C. COMPANY NAME   SIGNATURE   DATE   TIME     C. COMPANY NAME   SIGNATURE   DATE     C. COMPANY NAME   SIGNATURE   SIGNATURE     C. COMPANY NAME   SIGNATURE   DATE     C. COMPANY NAME   SIGNATURE   SIGNATURE     C. COMPANY NAME   SIGNATURE     C. COMP	•						
EXPLOSIVES (SW8330, SW8330, ADD-1, SW8330, ADD-2)   EXPLOSIVES (SW8330, SW8330, SW8330, ADD-1, SW8330, ADD-2)   SEMI-VOCA (SW8270)   A. I CH AFTALLS (SW8010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   S. MERCURY (SW7471)   C. CANIDE (SW9012)   C. CYANIDE (SW9012)   C. COMPANY NAME							İ
LEXPLOSIVES (SW8230, SW8330-ADD-2)							
LABORATORY ANALYSES:   EXPLOSIVES (SW8330-ADD-1, SW8330-ADD-2)   SEMI-VOCA (SW8270)   SEMI-VOCA (SW8270)   A I CP METALS (SW6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   MERCURY (SW741), MASENIC (SW760), SELENIUM (SW7740)   T. CYANIDE (SW9012)   RECEIVED BY:   COMPANY NAME							
LABORATORY ANALYSES:   LEXPLOSIVES (SW8330, ADD-1, SW8330-ADD-2)   NITRATE + NITRITE (E353.3)   SEMI-VOCA (SW8270)   A 1 CP METALS (SW6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   MERCURY (SW741), ARSENIC (SW7060), SELENIUM (SW7740)   CYANIDE (SW9012)   COMPANY NAME							
EXPLOSIVES (5W8330, ADD-1, SW8330-ADD-2)   EXPLOSIVES (5W8330, ADD-1, SW8330-ADD-2)   SEMI-VOCs (5W8270)   A ICP METALS (5W6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   MERCURY (5W7471)   A ICP METALS (5W6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   MERCURY (5W7471)   A ICP METALS (5W6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   A ICP METALS (5W6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   A ICP METALS (5W6010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCEIVED BY SHIPPER:   COMPANY NAME							
LABORATORY ANALYSES:   E. EXPLOSIVES (SW8330, SW8330, ADD-1), SW8330, ADD-2)   SEMI-VOC3 (SW8270)   A. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   S. MERCURY (SW7471)   G. LEAD (SW7421), ARSENIC (SW7601)   T. CYANIDE (SW9012)   COMPANY NAME							
LABORATORY ANALYSEB:   EXPLOSIVES (\$W8330-ADD-1, \$W8330-ADD-2)   WITRATE + NITRITE (E33.3.1)   SEMI-VOCs (\$W8270)   A. ICP METALS (\$W6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY   S. MERCURY (\$W7421), ARSENIC (\$W7060), SELENIUM (\$W7740)   7. CYANIDE (\$W9012)   7. CYANIDE (\$W9012)   7. CYANIDE (\$W9012)   8. MERCURY (\$W7700)   10. FACLOR OF SHIPPER:   COMPANY NAME   SIGNATURE   BILL OF LADING # DATE     COMPANY NAME   SIGNATURE   BILL OF LADING # DATE     FACLO COMPANY NAME   SIGNATURE   BILL OF LADING # DATE     FACLO COMPANY NAME   SIGNATURE   DATE   TIME     FACLO COMPANY NAME   SIGNATURE   DATE   TIME     COMPANY NAME   SIGNATURE   DATE     COMPANY NAME   SIGNATURE   DA							
1. EXPLOSIVES (SW8330, ADD-1, SW8330-ADD-2) 2. NITRATE + NITRITE (E353.2) 3. SEMI-VOC3 (SW8270) 4. ICP METALS (SW8010), MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY 5. MERCURY (SW7471) 6. LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) 7. CYANIDE (SW9012) 7. CYANIDE (SW9012) 8. ECEIVED BY: COMPANY NAME SIGNATURE BILL OF LADING # DATE TIME COMPANY NAME SIGNATURE BILL OF LADING # DATE TIME COMPANY NAME SIGNATURE DATE TIME COMPANY NAME SIGNATURE DATE TIME COMPANY NAME SIGNATURE DATE TIME							
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TIME 5003 DATE TIME HOLD 49 TIME 3 NOTE: MEASORE COOLER TEMPERATURE FROM TEMPERATURE BLANK 9565555C DATE 77,40 DATE 250m BILL OF LADING # A HND2 4°C Woca! 4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY (Juo m つっと SIGNATURE SIGNATURE 6. LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) RECEIVED BY SHIPPER. EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) RECEIVED BY LABORATORY: SIGNATURE Lorano 5000 A CO0/ AG RECEIVED BY: 2. NITRATE + NITRITE (E353.2) 1634 0501 LABORATORY ANALYSES: 030 व <u>ප</u> ප ANALYSES REQUESTED TYPE OF CONTAINERS COLLECTED DATE/TIME CONTAINER VOLUME COMPANY NAME COMPANY NAME COMPANY NAME # OF CONTAINERS • SEMI-VOCs (SW8270) MERCURY (SW7471) CYANIDE (SW9012) PRESERVATIVE 19/4 9/1/44 1, 94 767 et r MATRIX 3 3 3 3 3 PHILLIPS LABORATORY, KIRTLAND AFB 4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT **JEFF JOHNSON (GRAM) 505-299-1282** Toharon STEVE GORIN (LATA) 505-880-3439 ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1 - 7) SIGNATURE SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): RELEASED TO SHIPPER BY: CONTAINER TYPES: P. POLYETHYLENE AG - AMBER GLASS McCORMICK RANCH CG - CLEAR GLASS RELINQUISHED BY: 0 0 402 0 C  $\mathcal{C}$  $\mathcal{C}$ SITE ID, LOCATION ID, SAMPLE ID) 2 SAMPLE IDENTIFICATION LABORATORY CONTACT: SECONDARY CONTACT: PRIMARY CONTACT: COMPANY NAME COMPANY NAME COMPANY NAME PROJECT NAME: KRTLD154. O KRTLD154 - () KRTLD154 - O KRTLD154 - <u>Ú</u> 18 8 P KRTLD154 - () KRTLD154-KRTLD154-KRTLD154. KRTLD154 KRTLD154 KRTLD154 W - WATER O.OTHER MATRIX S-SOIL.

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HOON 16205, 4° DATE TIME TIME NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK DATE DATE BILL OF LADING # "Y (OV) ž 253 4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY F04 ر ر AG SIGNATURE SIGNATURE 6. LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) RECEIVED BY SHIPPER: 1. EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) SIGNATURE Annu A RECEIVED BY LABORATORY 3 AG RECEIVED BY: 2. NITRATE + NITRITE (E353.2) 8 LABORATORY ANALYSES: ANALYSES REQUESTED TYPE OF CONTAINERS COLLECTED CONTAINER VOLUME DATE/TIME COMPANY NAME COMPANY NAME 3. SEMI-VOCs (SW8270) COMPANY NAME 5. MERCURY (SW7471) PRESERVATIVE 7. CYANIDE (SW9012) 4/11/6 40 MATRIX 3 PHILLIPS LABORATORY, KIRTLAND AFB toth Colonson 4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL •NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT JEFF JOHNSON (GRAM) 505-299-1282 STEVE GORIN (LATA) 505-880-3439 ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1 - 1) ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE SIGNATURE SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): RELEASED TO SHIPPER BY: CONTAINER TYPES P - POLYETHYLENE McCORMICK RANCH AG - AMBER GLASS CG - CLEAR GLASS RELINQUISHED BY: 0 (SITE ID, LOCATION ID, SAMPLE ID) SAMPLE IDENTIFICATION LABORATORY CONTACT: SECONDARY CONTACT: PRIMARY CONTACT: COMPANY NAME COMPANY NAME COMPANY NAME PROJECT NAME:  $\varphi$ CLIENT 78 AM KRTLD154-KRTLD154 -KRTLD154. KRTLD154. KRTLD154 -KRTLD154 KRTLD154 KRTLD154 KRTLD154 KRTLD154 KRTLD154 W - WATER O.OTHER MATRIX: S - SOIL\*

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CHAIN OF CUSTODY
NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK

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PROJECT NAME:	MECURAICA KANCII	# OF CONTAINERS	1001	X 4300 X	· ndw	25.00		
CLIENT:	PHILLIPS LABORATORY, KIRTLAND AFB	TYPE OF CONTAINERS	ادر					
PRIMARY CONTACT:	JEFF JOHNSON (GRAM) 505-299-1282	CONTAINER VOLUME	1603					
SECONDARY CONTACT:	STEVE GORIN (LATA) 505-880-3439	PRESERVATIVE	<i>4</i> °C					
LABORATORY CONTACT:		ANALYSES REQUESTED	1 2	3	*	s	۰	7
SAMPLE IDENTIFICATION	•	DATE/TIME	i					
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MATDIX.	CONTAINED TYPES:	LABORATORY ANALYSES:						
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W.WATER	CO - CLEAR GLASS	2. NITRATE + NITRITE (E353.2)	(2)					
O. OTHER	AG - AMBER GLASS	3. SEMI-VOCs (SW8270)						
NOTE: FOR SOIL SAMPLES OF	NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 GLASS JAR OF SOIL AT	4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY	INUS LEAD, ARSENIC	S, SELENIUM, AND	MERCURY			
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350 TIME NOTE: MEASURE COOLER TEMPERATURE FROM TEMPERATURE BLANK 923535442 9/2D DATE DATE BILL OF LADING # S 4. ICP METALS (SW6010); MINUS LEAD, ARSENIC, SELENIUM, AND MERCURY Jahrson SIGNATURE SIGNATURE LEAD (SW7421), ARSENIC (SW7060), SELENIUM (SW7740) RECEIVED BY SHIPPER 1. EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2) RECEIVED BY LABORATORY: SIGNATURE J. RECEIVED BY: NITRATE + NITRITE (E353.2) 0501 19 HY ORE LABORATORY ANALYSES: 1501 44/2/15 ANALYSES REQUESTED TYPE OF CONTAINERS COLLECTED CONTAINER VOLUME DATE/TIME エレく COMPANY NAME COMPANY NAME COMPANY NAME 3. SEMI-VOCs (SW8270) # OF CONTAINERS MERCURY (SW7471) PRESERVATIVE CYANIDE (SW9012) 1/5/4 SEPT アドフ MATRIX PHILLIPS LABORATORY, KIRTLAND AFB 4 C IS REQUIRED TO PROVIDE SUFFICIENT SAMPLE VOLUME FOR ALL NOTE: FOR SOIL SAMPLES ONLY ONE 16-02 OLASS JAR OF SOIL AT JEFF JOHNSON (GRAM) 505-299-1282 Tapposas STEVE GORIN (LATA) 505-880-3439 ANALYSES. THE REQUIRED ANALYSES FOR EACH SOIL SAMPLE ARE IDENTIFIED BY CHECKING THE APPROPRIATE BOXES (1.7) SIGNATURE SIGNATURE RELEASED TO LABORATORY BY (SHIPPER): SIGNATURE RELEASED TO SHIPPER BY: CONTAINER TYPES: P - POLYETHYLENE AG - AMBER OLASS McCORNICK RANCH CG - CLEAR GLASS RELINQUISHED BY: LENY 0 torna 000  $\frac{1}{2}$ (SITE ID, LOCATION ID, SAMPLE ID) SAMPLE IDENTIFICATION 0 LABORATORY CONTACT: SECONDARY CONTACT: PRIMARY CONTACT: COMPANY NAME COMPANY NAME COMPANY NAME PROJECT NAME: SKRN TIN CLIENT KRTLD154-KRTLD154 KRTLD154 -KRTLD154-KRTLD154. KRTLD154-KRTLD154 KRTLD154 KRTLD154 KRTLD154 KRTLD154 W - WATER O. OTHER MATRIX: S.SOIL.

## CHAIN OF CUSTODY NOTE: MEASURE COOLER

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SECONDARY CONTACT: STEV LABORATORY CONTACT: STEV LABORATORY CONTACT: STEV SAMPLE IDENTIFICATION (SITE ID, LOCATION ID, SAMPLE ID) KRTLD154 - O 1 \( \times \) \(	PHILLIPS LABORATORY, KIRTLAND AFB		1	<u>ी</u>			华泰。	· 新光光	*****
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	CONTAINER TYPES:	LABORAT	ABORATORY ANALYSES:			·	<i>J</i> '''''	A TE YOU	10
	P - POLYETHYLENE	1. EXPLOS	EXPLOSIVES (SW8330, SW8330-ADD-1, SW8330-ADD-2)	330-ADD-1, SW8	1330-ADD-2)	•			
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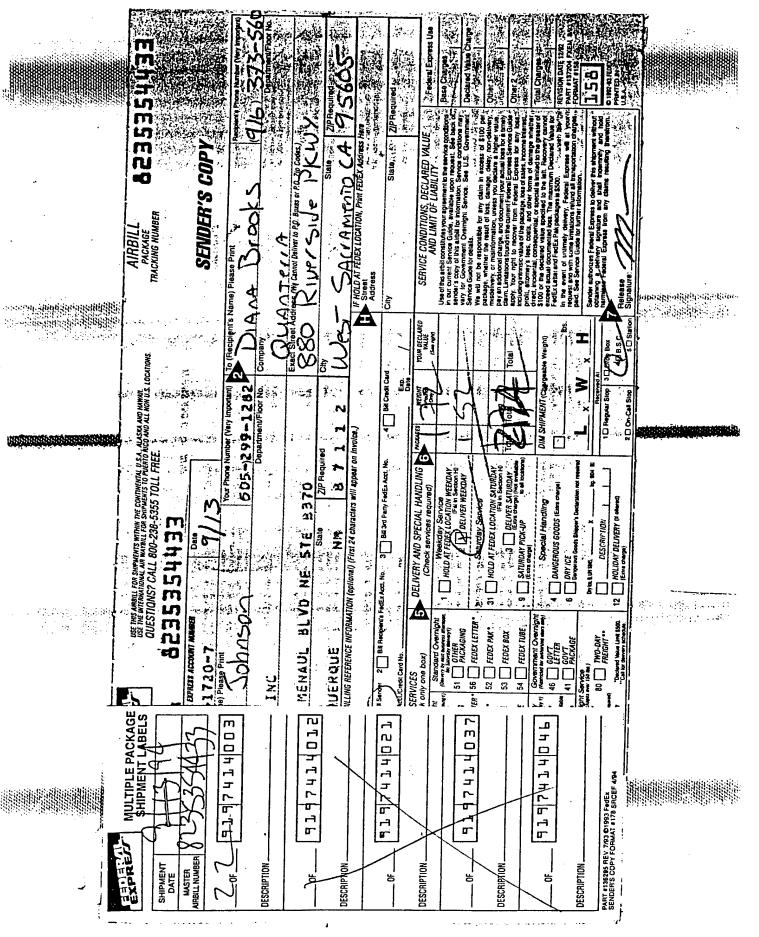
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